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Electrical Contracting

March
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With Which Is Incorporated
The Electragist

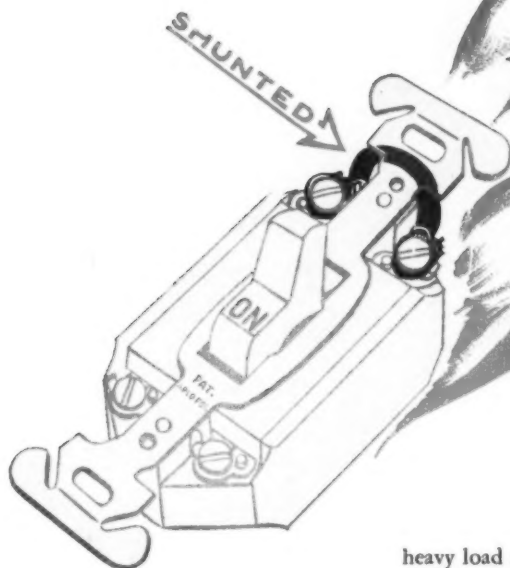


Conduits
by
Conduit
Experts



National Electric Products Corporation
National Metal Molding Division
Pittsburgh, Pa.

THIS *will not* overcome burning of switch contacts at the "make"



EXPERIENCE has shown that burning of contacts at the "make" cannot be overcome by shunting a double pole switch to operate as a single pole switch. Besides being ineffective and obviously uneconomical, this practice extends the trouble... It adds two more contacts to burn and pit. Shunting merely increases switch capacity. It does not eliminate burning of contacts at the "make" because this trouble is not due to low carrying capacity. It has been traced directly to the design of the switch contacts.

A problem of contact design...

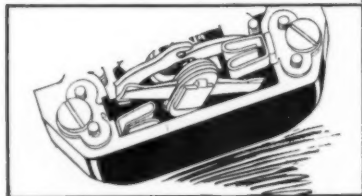
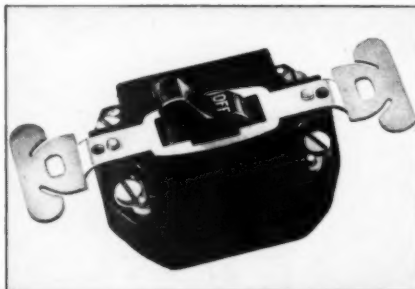
The contacts in a switch controlling the highly efficient type "C" lamps, now widely used, receive an enormous inrush of current at the instant of "make". The load is estimated at ten to twelve times the normal current after the cold lamp filament becomes heated. If the design of the contacts permits recoil when the contact blade strikes between the ends of the contact spring, the

heavy load of fusing current will burn and pit the contacts. In a short time the switch will fail completely.

These new contacts will not burn at "make"

Hubbell engineers eliminated the chief cause of switch failure when they perfected the radically new form of contacts used in the new line of Hubbell Switches. These contacts are scientifically designed so that recoil and vibration are practically eliminated. *They will not burn and pit—even when in circuit with type "C" lamps.*

Check the other new Hubbell Toggle Switch features listed here. Further information will be gladly supplied.



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A radically new form of contact spring scientifically designed so that two different rates of vibration are set-up in the spring; one tending to counteract the other. Thus recoil is practically eliminated in the ends of the contact spring when the solid metal contact blade strikes between them. As a result, burning and pitting of the spring is prevented—even when in circuit with type "C" lamps.

An automatic "kick off" prevents sticking of blades in contact.

Commutator support is perfectly insulated. Commutator blades rigidly riveted to carrier, insuring positive alignment.

Spring arm is pivoted on a round shaft, seated in a symmetrical bearing, facilitating faster, smoother action without wear.

Operating mechanism is separate from the bridge and perfectly insulated.

A solid bridge with ears lies in a recess across Bakelite cover—entirely insulated; perfect alignment and rigidity insured.

Each wiring terminal is held by two screws. Bakelite case completely encloses mechanism.

A complete line to meet any need—

- 9801—Single Pole, 5 amps. 250 volts; 10 amps. 125 volts
- 9802—Double Pole, 10 amps. 250 volts
- 9803—3-way, 5 amps. 250 volts; 10 amps. 125 volts
- 9804—4-way, 2 amps. 250 volts; 5 amps. 125 volts
- 9805—Single Pole, 20 amps. 250 volts
- 9806—Double Pole, 20 amps. 250 volts

HUBBELL
Toggle Switches

Electrical Contracting

With Which Is Incorporated The Electricist

Victor A. Hanson,
Eastern Field Editor

S. B. WILLIAMS
Editor

Coit A. Smith,
Western Field Editor

Vol. 29

MARCH, 1930

No. 5

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RESALE PRICE NEWS

There have been a number of price changes made in the Resale Price Section this month due either to advancing prices or to adjustments to bring the prices into line with best practice, as follows:

Annunciators
Adaptors and reducers
Adjusters and acorns
Floor boxes
Cutout boxes
Flexible armored conduit
Fittings and box connectors
Shadeholders
Sockets
Safety switches
Transformers

New numbers have been added to the price section on

Annunciators
Adaptors and reducers
Floor boxes

A new set-up on Pull Cord Switches (PL-20) will make it easier to use this section.

The increase in prices on some safety switches have come about as the result of the new methods of testing a.c. switches as reported in the news section of this issue.

These are average prices and when an unusual condition occurs in any city it must be taken into consideration by contractors in that city.

All Form 7 conduit fittings will be found on PL-11. Form 6 prices will be found on PL-13.

Published monthly. Entered as second class matter November 14, 1928, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Copyright, 1930, by The Electrical Trade Publishing Company.
Subscription: U. S., \$2.00; Foreign, including Canada, \$2.50. Single copies, 20 cents.

ELECTRICAL TRADE PUBLISHING COMPANY

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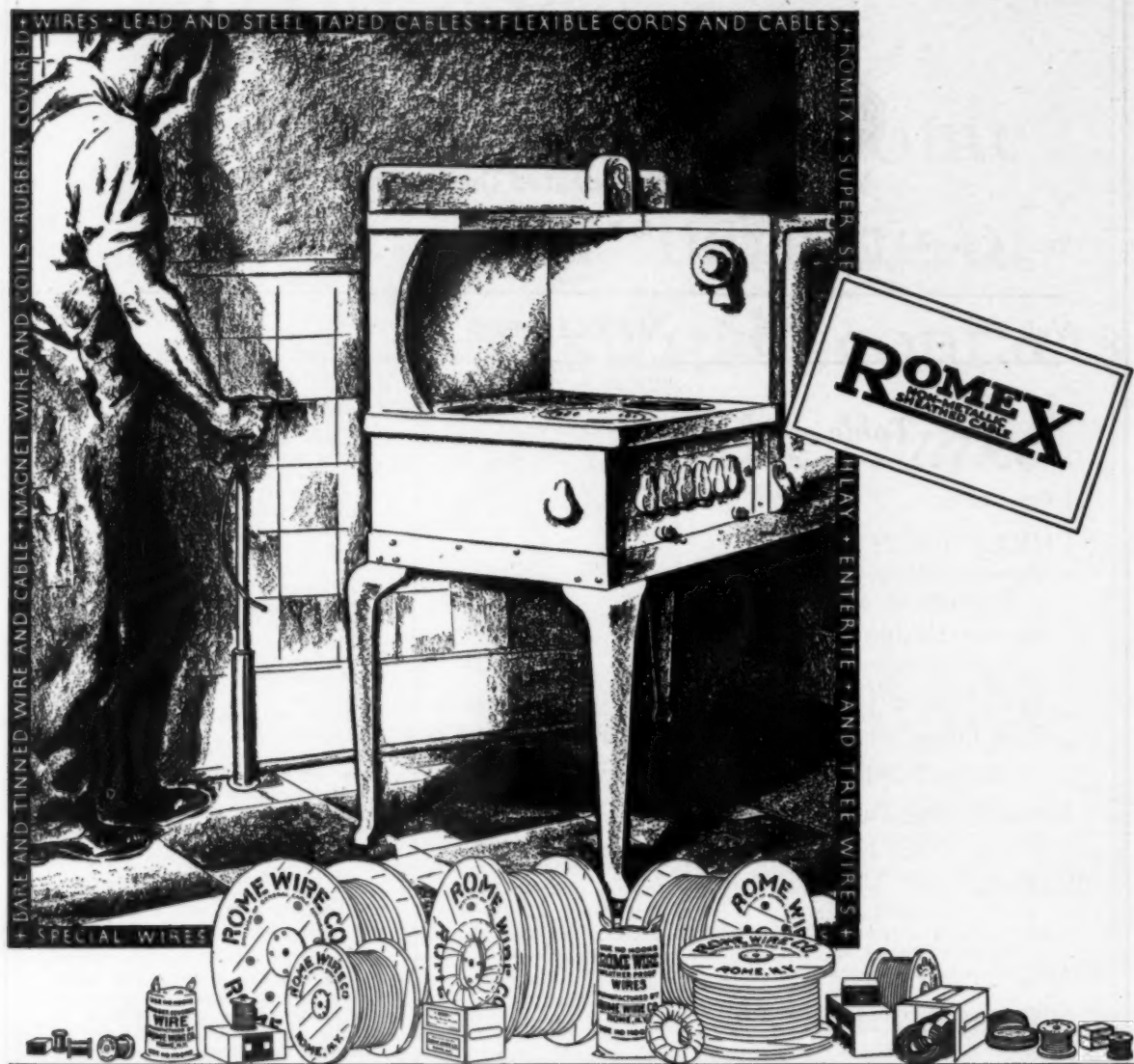
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RomeX and ranges sell each other

No matter who sells an electric range, there's an installation job for some contractor.

Such a job can be quickly and easily handled with RomeX. And when RomeX is used the customer gets his job at lower cost. For RomeX is lighter, easier to handle. It's easier to fish through small spaces, needs fewer fittings. It does away with

the fuss and muss ordinarily so annoying to busy housewives.

Range sales open new jobs for RomeX. RomeX—at lower cost per installation — makes possible easier range sales. A relation you can't afford to overlook.

The latest RomeX booklet gives complete facts. May we send you a free copy?

ROME WIRE COMPANY, Rome, N. Y.

Division of General Cable Corporation

2932 R

ROME WIRE

The Practical '30s

THE speculative twenties have given way to the hard-headed practical thirties. Industry has built a huge productive machine. It must be fed with business. To keep it running at, or even near capacity, calls for the best in everyone.

There will be plenty of business, because a nation of one hundred and twenty million persons must be fed, clothed, sheltered and amused. There will be plenty of business, because we cannot and will not face another period of nation-wide unemployment.

But industry with its ever-growing capacity for production will be hungry for business—and the manufacturer and contractor who would have his share must fight the pack.

Increasing competition demands the most from all producers today, be they manufacturers or contractors. This calls for the most efficient and economical sales methods.

Those who have nothing better to offer in competition than price will find conditions harder than ever; because the value of the dollar is taking on a new significance.

• • •

IT is for this reason that ELECTRICAL CONTRACTING is promoting the "Specialist" idea for contractors. Bigger sales, better sales will be

made by contractors who take up a specialty or two.

Contractors will also have to learn to eliminate waste in all of their operations and for this reason ELECTRICAL CONTRACTING is emphasizing the need for fighting the wasteful practices that lie at the root of destructive price competition.

With an ever increasing number of uses for electric service coming on the market the opportunity for electrical contractors was never greater, but even so there will be a vast weeding out of contractors during the next decade. This mortality is an economic waste the cost of which must be borne by competing contractors, jobbers and manufacturers. To decrease this waste by building profits for contractors, ELECTRICAL CONTRACTING has made a Resale Price Service available to its readers.

• • •

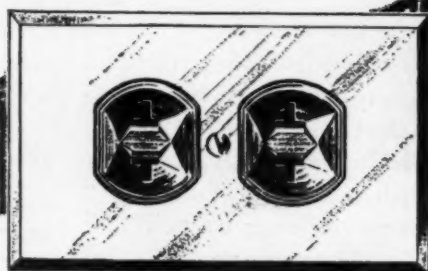
THE practical '30s will show the mettle of industry papers. Leadership—knowledge of field requirements will be essential.

ELECTRICAL CONTRACTING is ready. It offers its readers the help of its entire staff to make the next decade one of profit for the business of wiring, through reduced waste, improved methods, increased economy, better management, more sales and better prices.

ANACONDA

from mine to consumer

REG. U.S. PAT. OFF.



Sell more Outlets!

SELL extra outlets with every wiring job this year and every year. Their installation means increased sales of wiring products and encourages the purchase and use of more appliances.

Every new home and almost all old homes are prospects. Adequate wiring provides real economy of time and effort for the consumer. Electric service can never go farther than the wires which carry it.

Sell more convenience outlets!

Anaconda safeguards quality from mine to consumer—provides a nationwide service, prompt, dependable, complete.



WIRING PRODUCTS

Rubber-covered Wire
Flexible Cords
ABC Armored Cable
Durax Sheathed Cable
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Duracord Heavy-duty Cord

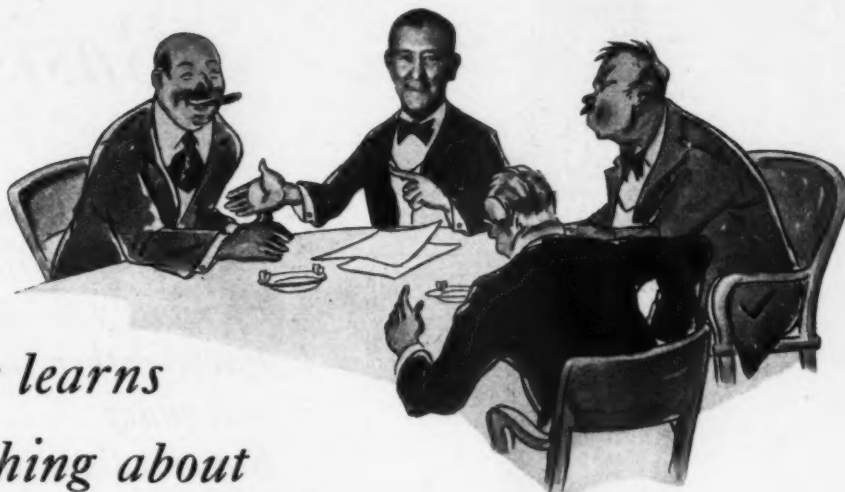
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MARCH, 1930



*John Wise learns
something about*
Undivided Profits

"BANKERS are funny people," said John Wise apropos of nothing at all. He was sitting with a half a dozen of his competitors at the big round lunch table which was known as the Electrical Club.

"Funny?" exclaimed Moe Unterbidder. "Yeah—comic like der morgue."

"I knew a funny banker once," put in Henry Trimmer. "He was funny in the head. He loaned me a hundred dollars."

"When you fellows get through I'll tell you about it," said John Wise, patiently.

"I went into the bank this morning," he continued, "to check things up before making out my income tax—"

"Iss you braggin', Ch-ohn, oder tellin' vopper-stories? Vot righd has contractors mit income taxes ven dere ain't no income in der business?"

"—before making out my income tax," repeated John. "Well, Old Moneybags looked over my statement, and asked, 'How much did you invest originally in this business?' and I said, 'Nothing, but some experience and

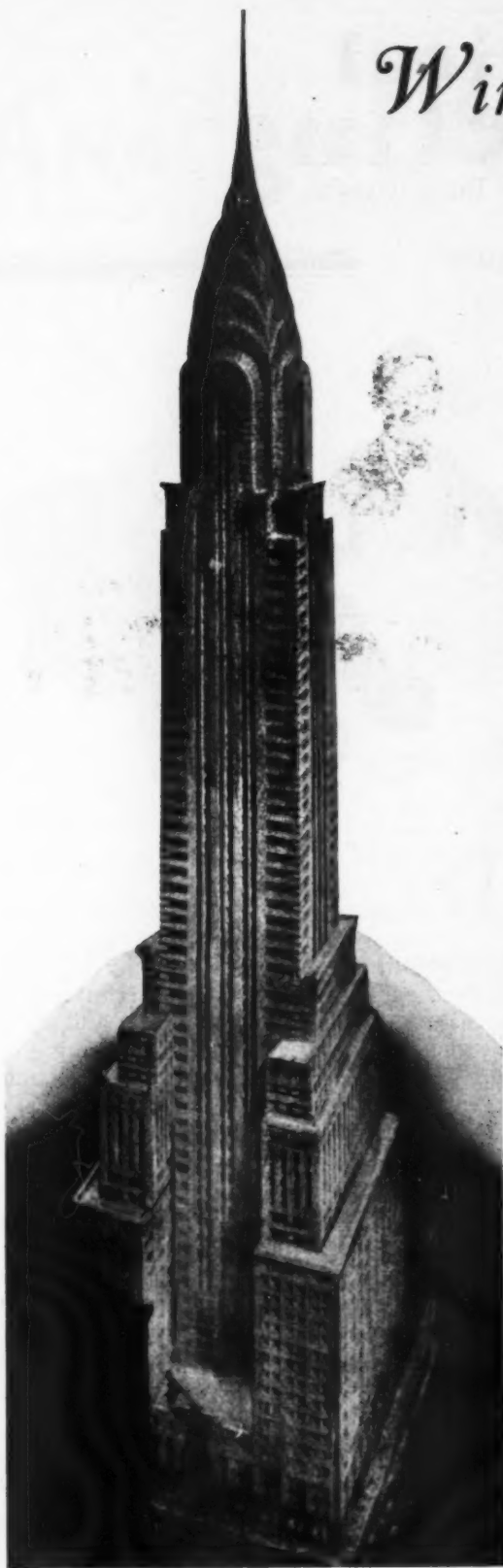
a pair o' pliers I picked up somewhere'—"

"Ven nobody vass look-in'," added Moe.

"—and Old Moneybags says, 'John, I wonder whether you realize how fortunate you are. All these tools and equipment and autos and stock of materials and everything you have represent undivided profits. If I could make my bank statement look like that I'd be called a financial wizard.'"

"WELL, do you know, fellows, I got to thinking that over. Here we are in a business that we all started on a shoe-string or less. We've all got homes, and some of us have kids in college, and we've got equipment and tools and a stock-room full of stuff and a little money to swing on, and we don't realize that every nickel's worth represents profit. This banker chap was actually envying me because my business didn't owe me a cent while his bank owes him and the other stockholders a million dollars in real money that they put into it when they started.

"I never looked at our business that way before. We contractors are a whole lot better off than we realize."



CHRYSLER BUILDING
Latest New York Skyscraper—77 Stories High

Wiring of World's T

Designed on

Basis of

1. *Average individual occupant*
2. *Floor area basis for circuiting*
3. *Flexibility*
4. *Facts rather than assumptions*
5. *Adequacy*
6. *Standardized feeder lengths*
7. *Provisions for the future*

By DAVID M. GOE

Engineer, Hatzel & Buchler, Inc., New York

IN considering what are the electrical requirements of a large commercial structure we may very easily in the contemplation of the immensity of the building itself, lose sight of the principal reason for which it is supplied with electrical energy—the accommodation of a certain number of average human beings, human beings who must be provided with all of the facilities for reaching their places of business in the building and for engaging in their various activities there.

To determine how many elevators and pumps and fans and lights are required for all of these people involves the application of knowledge acquired on similar projects. From statistics gathered over long periods of time, the building designers know pretty accurately how many persons will be traveling up and down, and in and out of a certain class of building in a given time and so they can figure out the elevator requirements and the necessary feeders.

From other data it is known how many cubic feet of fresh air and how many gallons of water will be required, and thus the number and capacity of blowers and pumps and feeder requirements may be determined.

Electrical Contracting, March, 1930

Tallest Building

So through the whole field of the miscellaneous power requirements of a building it is possible to base computations and calculations on actual records of what has proved necessary in other similar cases. It is only when the question arises as to what to provide in the way of lighting facilities that there seems to be a tendency to hesitate and grope about, and in the end make a conservatively safe guess. We believe that this is all wrong and unnecessary, and that it is just as possible to compute accurately the probable demand for this class of electrical energy as for any other. We use the term lighting facilities here as a general name for all of the miscellaneous purposes to which electricity at ordinary lighting voltages may be put in a commercial building.

No more eloquent evidence can be presented of the manner in which an electrical system is functioning, than the logs of tests made with graphic watt-hour meters on the feeders of fully occupied buildings. For here we have an indisputable record of just how the load on a feeder may fluctuate.

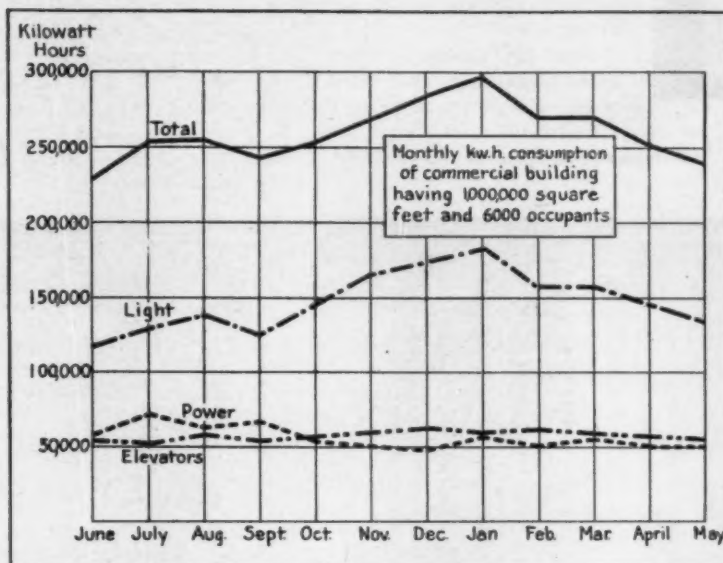
By the time the plans of a building reach the contractor, the physical aspects of the building are pretty definitely fixed. The core of the structure consisting

of elevators, stairways, utility spaces and shafts for various purposes, such as heating, ventilating, plumbing, electrical, etc., are located.

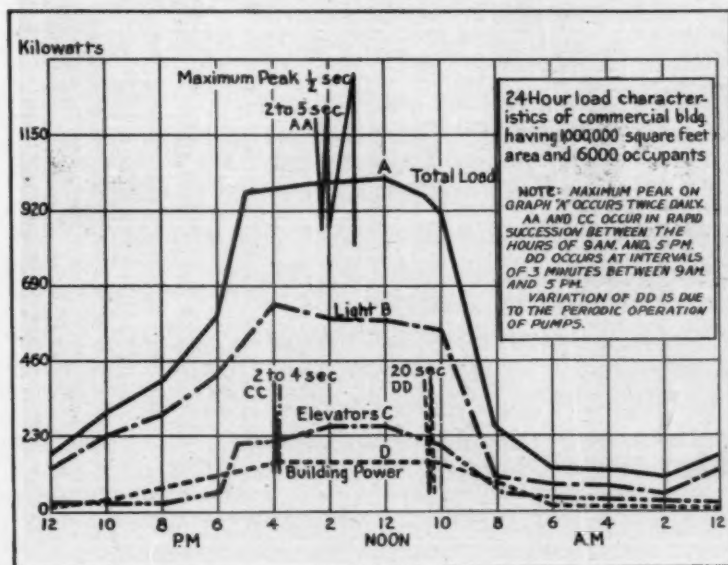
Usually in a large building several shafts are provided for the exclusive use of each class of equipment and the contractor's problem becomes one of best

utilizing the space allotted to him. The value of core space is so great, however, that the raceways are reduced in size to the minimum that seems workable. This so complicates the problem that a prudent contractor will make riser drawings and layouts showing the equipment that must go into a shaft and its arrangements on each floor.

In considering the question of what to provide in the way of feeder capacities and electrical facilities, we have first in mind that they shall be adequate. However, it is just as serious an error to



Monthly K. W. H. consumption of commercial building having 1,000,000 sq. ft. area and 6,000 occupants.



Electrical Contracting, March, 1930

Twenty-four hour load characteristics of commercial building having 1,000,000 sq. ft. area and 6,000 occupants.





provide too much as too little, for at the one extreme unnecessary outlay of the owner's capital is caused, and at the other the attractiveness of the building from the standpoint of convenience to prospective tenants is jeopardized.

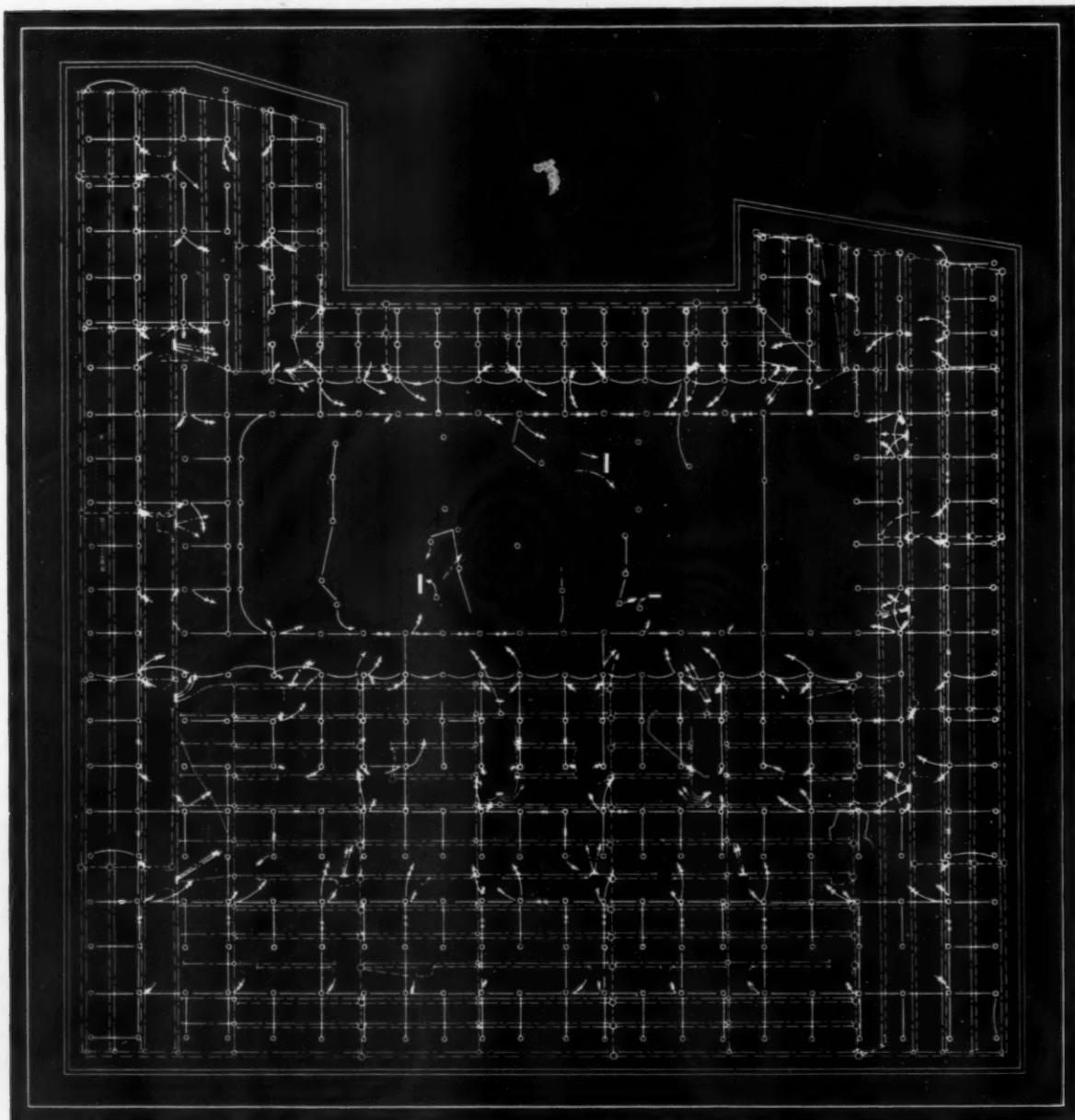
Our first step, therefore, is to make up a drawing showing diagrammatically every floor of the building in elevation and every piece of electrical power equipment on each floor.

Next we compute from the plans the areas of all floors and tabulate these values at one side of the diagram for ready refer-

ence, as this information is essential in determining the number and size of lighting feeders. When we are making our allocation of feeders to floor areas at the same time we also mark on the drawing the area that is served by each feeder and by each panelboard.

The lighting panels to be installed on each floor are now indicated on the diagram and the manner of grouping them together on main feeders is considered. In order to standardize our sizes as far as possible, our first thought is to divide the total area into equal parts and make each feeder serve the same amount of space. If there is more than one point of distribution on each floor, the result will be affected in the same ratio. An-

A typical floor plan of the Chrysler building, showing the electrical layout including the ceiling lights and the under floor system.



other important factor is the length of a feeder between main switchboard and panels. If we are to reduce the number of feeder sizes, their lengths as well as their loads must be nearly the same; otherwise the voltage drop factor will upset the scheme. If there is only one main switchboard, located in the basement of a building, and the feeder runs very long it may be possible by reducing the floor area served by the long feeders, and consequently their loads, to avoid increasing their size solely for the purpose of keeping the voltage drop within specified limits.

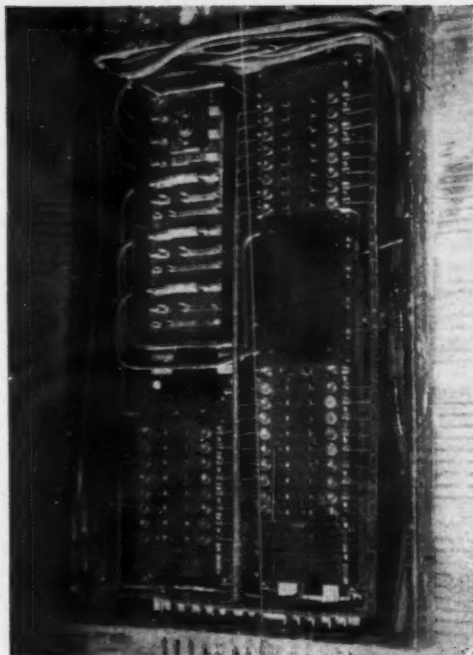
On the Chrysler job, owing to extreme heights, it was found advantageous from the standpoint of distribution to carry primary energy to four different elevations in the building and locate secondary switchboards at these levels. This opened the way for standardizing feeder lengths and sizes to such an extent that it became apparent that virtually one cable size and conduit diameter could be used for all typical floors.

We believe that the problem of providing the lighting and related facilities of a large building constitutes the most important phase of the entire feeder study, for without these facilities, the building is useless for its intended purpose.

IN our study of the problem presented in the Chrysler Building we decided the logical starting point was with the individual. Having considered the needs of an average occupant and provided for his utmost wants we should be in a position to use any multiple of him that size required. We must bear in mind, however, that all of the occupants of a building will not do the same things at the same moment. In other words their activities will be diversified and likewise their demands for current.

While we could not possibly get a photograph showing just what each individual in a large building is doing at a given instant, we are able to get a picture of the effect which their combined requirements have on the energy supply of a building by the use of graphic wattmeters. We have made these charts, (see page 7) in other, fully occupied buildings, and they show, for instance, how a population of 6,000 people behave as to their collective instantaneous demands for light and power consumed in 120-volt circuits and the monthly consumption.

It is a generally accepted rule in considering how many occupants a given space will accommodate to allow 100 sq. ft. to each individual. Imagine for a moment, an individual working alone in an office 10 ft. square. If he is at a desk, he may require artificial light. In summer he may want a wall fan. This individual



Typical lighting distributing panel in meter and panel room. There are three of these panels on each floor.

may be using an electrically driven adding machine, or typewriter. Maybe he will be a draftsman using an electric erasing machine. Whatever his occupation, it is pretty difficult to conceive of his requiring more than 200 watts of electrical energy unless he is very prodigal of light. And as we take multiples of the individual in his 10 ft. cubicle we find it more and more difficult to make him use his 200 watts. Look about in any office and figure roughly the relation between the occupants of the room and its size and estimate the amount of electricity being used and it will be a rare occurrence if more than 2 watts per sq. ft. or 200 watts per individual is being consumed.

In view of the findings in various fully occupied modern buildings, and bearing in mind the practice of linking together building population with floor areas, we are convinced that the square foot basis constitutes the logical method of attacking the problem of feeder sizes. What, then, is a safe allowance to make? The current National Electric Code specifies 2 watts per sq. ft. and we are in agreement with this allowance as a guide for making calculations. However, a computed cable size will hardly ever turn out to be a stock size, as shown on the wire tables, and since we will then use the nearest larger size found in the table, we will probably always exceed the 2 watt minimum. Furthermore, in the interest of standardization it may be decided, as we did in the case of the Chrysler Building, to select a size of cable that comes nearest to meeting the requirements for all feeders and adopt it as a standard. This procedure in the case cited enabled us to place large orders for certain sizes of wire and conduit, and very materially simplified the construction and installation problems on the job.

To return to our office worker in his 100 ft. space, having decided how much current to provide for him we now have to consider how best to place it at his disposal. Much study of the problem of general illumination has shown that for ordinary general lighting purposes one outlet for every 100 sq. ft. is most satisfactory. This gives a uniform spacing of ceiling outlets on 10 ft. centers. Since almost all buildings of this type are now constructed with columns on 20 ft. centers making bays





20 ft. square, the 10 ft. spacing of outlets works out admirably giving four lights per bay. For convenience outlets it is customary to locate two receptacles mounted on opposite faces, on each interior column and one on all exterior columns. In some cases fan outlets mounted 6 or 7 ft. above the floors are also placed in two sides of each column.

Floor outlets bring a very necessary consideration in modern offices, and the provision of underfloor raceways both for lighting and telephone purposes is rapidly becoming a universal practice. In the case of the Chrysler Building two independent grid systems of underfloor ducts (see page 16) were installed in the floor fill of each rentable floor, providing a means of getting a telephone, low tension, or lighting outlet at almost any desired point in the floor.

HAVING our tenant provided, so far as possible in advance of knowing his actual layout, with plenty sources of energy, we must next arrange these outlets on circuits to be carried back to the panel boards in the shafts. Since very few individual tenants will take less space than one bay of 400 sq. ft., it is customary to use the bay as the working unit in considering the circuiting of the outlets.

While the National Electric Code and most city codes allow twelve outlets to a circuit, experience has shown that the best practice is to place ceiling outlets on a separate circuit from convenience outlets or appliance receptacles because of the possible blowing of fuses due to trouble in portable devices and also because of the annoying flicker in the lights due to the starting and stopping of many appliances. Therefore with the bay our unit, and with four ceiling outlets, in general, per bay, one circuit would normally be allotted to them and another to the side wall and column receptacles.

In the Chrysler Building it was decided to go one step further and provide another circuit for the high tension floor outlets which the bay ultimately might have. Thus, there are in general three circuits, to each 20 ft. bay, and the conduit system was laid out with this scheme in view, one home run conduit being provided for each bay.

In order, however, to make the system flexible, tie conduits were placed between bays so that if interconnection of the circuits of two or more bays is desired a raceway is available. Since the underfloor circuits feed down from the ceiling junction box by way of column receptacles to the nearest under-floor junction box, and the under-floor system is also tied into panel boxes by means of 1-in. conduits, we have a grid system in floor and ceiling which makes it possible to devote existing circuits not needed in one part of the floor to an unforeseen demand in another area. It was also considered desirable for metering purposes to place all of the corridor and utility space lighting on a separate main feeder and these circuits on each floor were given separate consideration. By means of empty tie conduits the entire core of the building is encircled by a raceway, making it possible for any public lighting circuit to be carried to any of the three panel boards on a floor.

In order to give the maximum flexibility we have provided a considerably greater number of separate circuits than the number of outlets require. Suppose for example, a tenant takes two or more adjoining bays. There is no reason at all why his receptacle and under-floor outlets should not be grouped together on the fewest number of circuits possible. This can be done either at the panel box or through the tie conduits in the ceiling. Therefore it would be useless extravagance to provide a branch circuit on the panel for each actual wired circuit.

In determining how far to reduce the panel board circuit provisions below the wired circuit requirements we must bear in mind first, that the city code requires a main feeder of sufficient capacity to give a certain number of amperes for each branch circuit and second, that it is essential, of course, that we have our main feeders large enough to provide the required number of watts per square foot.

So it is necessary to make a test computation, checking the result from these different angles and also remembering that the voltage drop must fall within the prescribed limits. For the case in point after numerous cross checks we arrived at two and one-half circuits per bay as the proper number

(Continued on page 126)



General lighting arrangement on typical floor of Chrysler Building.

CHRYSLER BUILDING



Feeder Design



*Calculations and recheck to insure adequacy
and adherence to voltage drop requirements*

IN adopting the alternating current feeder network system for the Chrysler Building, 120-208 volts, a bold and radical departure was made from existing practice in greater New York City. Three phase feeders carrying the current at 13,800 volts were brought into the building and extended vertically to four transformer banks located at different floor levels. The secondary conductors from these transformer banks were brought to low tension network switches and thence to the associated distributing main light and power switchboards.

This method resulted in the building load being divided into four parts as follows:

By L. MACKLER

*Electrical Engineer,
L. T. M. Ralston, Inc., Consulting
Engineers, New York City*

This system of employing high tension feeders and transformer banks located inside the building itself, was a pioneer installation in the eastern part of the country.

Another factor generally not given the importance it deserves is that the voltage drop along a lighting feeder up to the point where tenant sub-metering begins, represents a loss of energy which is recorded as part of the total electric current bill paid by the owner and no part of which he recovers from any tenant. It can be shown that the increased cost of keeping down voltage drop by liberal sizing of feeders amortizes itself almost within the same period of time that the building project does as a whole. In addition, there is the inestimable advantage of a steady and uniform voltage free from sudden dips and peaks particularly evident where alternating current is employed.

In designing the light and power feeders it was decided to give full and careful consideration to all pertinent and associated factors, such as "skin effect" in the larger sizes of conductors, power factor of the power consuming equipment and devices and to provide a flexible and yet economical grouping of feeders and, most important, secure the proper limiting of voltage drop.

It was in calculating the voltage drop of the different lighting feeders that radical departures were made from the conventionally accepted practice. The objective aimed at was to obtain 115 volts, or a voltage as near to that figure as possible, at, or close to the ends of the branch lighting circuits. The voltage at the various distributing switchboards throughout the building is maintained at 208 between phases, which

Location of Transf. Bk.	No. & Size of Each Bank	No. of Net-Work Switches	Supplies Current for Light & Power to Floors
Basement	5-300 K.W.	6	Cellar to 14th Fl.
30th Fl.	5-300 "	6	15th to 46th Fl.
60th "	4-300 "	5	47th Fl. to Roof
72nd "	4-150 "	4	Floodlighting

Aside from the continuity of service, the greatest resulting benefit is embodied in the reduction of the lengths of power and lighting feeders required, thus cutting down the voltage drop and decreasing the cross sectional area. Instead of extending feeders from the cellar to the upper floors which, after allowing for slack, horizontal runs, etc., may total 1500 ft. or more, it has been possible to keep them down to a maximum length of 350 ft. and an average length of 200 ft.

corresponds to 120 volts between neutral and any live phase. This then meant that 5 volts between neutral and any live phase or 8.65 volts between the three live phases were to be the maximum permissible voltage drops.

The best copper arrangement was found to be that scheme wherein a drop of 2 per cent, or 4.15 volts across phases, was allowed in the feeders and a drop of 2.6 volts between the neutral and any live phase on the average lengths of branch circuits. A value of 4.15 volts across phases is equivalent to 2.4 volts between phase and neutral; the sum of 2.4 and 2.6 is 5, the total voltage drop desired.

RESISTANCE AND REACTANCE PER 1000 FEET OF COPPER CONDUCTORS OF 97.3% CONDUCTIVITY AT 60 CYCLES AND AT 77° FAHRENHEIT

Size of Conductor		Ohms Per 1000 Feet					
		Resistance		Reactance			
				Vertical		Horizontal	
C. M.	B. & S.	D. C.	60 Cycles	3 Cond.	4 Cond.	3 Cond.	4 Cond.
83693	1	.13240	.13250	.0472	.0563	....	....
105535	1/0	.10500	.10510	.0508	.0535	....	....
133077	2/0	.08326	.08329	.0472	.0510	....	....
211600	4/0	.05236	.05258	.0472	.0456	.0368	.0390
250000	...	.04432	.04458	.0463	.0485	.0356	.0388
300000	...	.03693	.03724	.0455	.0463	.0351	.0380
350000	...	.03165	.03201	.0438	.0472	.0347	.0376
400000	...	.02770	.02810	.0423	.0458	.0343	.0373
450000	...	.02462	.02508	.0409	.0445	.0341	.0369
500000	...	.02216	.02266	.0398	.0434	.0339	.0366
600000	...	.01847	.01907	.0425	.0434	.0336	.0360
700000	...	.01583	.01652	.0406	.0470	....	....
800000	...	.01385	.01464	.0415	.0455	....	....
1000000	...	.01108	.01204	.0388	.0460	....	....
1200000	...	.00932	.01035	.0415	....	....	....

NOTE: In vertical position conductors are spaced depending upon cable supports; in horizontal position insulations are in contact.

The cross sectional areas of the feeders were determined by using the formula

$$C.M. = \frac{KLI}{Vd}$$

C.M. = circular mils
L = length of circuit—one conductor
I = amperes per phase
Vd = volts drop between neutral and 1 phase
K = a constant depending on the character of load and has following values:

Power Factor	Kind of Load	Value of K
100%	Lighting	11
95%	Lighting & Motor	12
90%	Motor	13.5
85%	Motor	15
80%	Motor	17

At first glance it would appear that the constant of 11—lighting load—100 per cent power factor would be the right one; but the high tension alternating current feeders, from the utility company, in themselves have a power factor of only 95 to 98 per cent. This fact, plus the increasing use of motor operated devices in business to-day, compelled the use of the higher factor of 12—corresponding to a motor and lighting load of 95 per cent power factor.

The length of the circuit was of course easily ob-

tainable. Sufficient cable was allowed for pull boxes, switchboard connections, etc. A note was made of the amounts of horizontal and vertical portions of the total length. This was for purposes of back checking the voltage drop.

The determination of I, the current in amperes per phase, involved certain complications.

The 1928 National Electric Code recommended method for calculating feeder sizes for office buildings gave the basic unit as 2 watts per square feet of gross area for the first 10,000 sq. ft. and of 0.7 of 2 watts, or 1.4 watts per sq. ft., for the remaining area.

The Electrical Code of the City of New York required that all feeders be sized on the basis of 6 amp. for every active and spare circuit on all the panelboards supplied by them.

Overshadowing, however, from the building owner's standpoint, both of the two above considerations was the question of what is apt to be the actual load on a feeder after the building was in service, and, with this information available, what adjustments would be necessary to first adequately supply the tenant with current at a proper voltage and free from objectionable flickering, at the same time satisfying the city code.

A count was made of all the various types of outlets supplied from the different panelboards and conservative wattage values assigned to each: Ceiling outlets in tenants' portions 200-watts, base receptacles 50 watts, corridor ceiling outlets 100 watts, toilet ceiling outlets 60 watts, etc.

In accordance with the city code requirements, the total number of active and spare panelboard circuits per feeder was also assembled and noted. The national code method was not neglected; the various floor areas intended to be served from a certain feeder were calculated and recorded.

Comparing the resulting figures of amperes per phase, a very interesting fact was at once evident. The quantities, using the city code requirements and the actual calculation for designated outlet wattages were almost invariably close together, the differences were of no significance; whereas the amperes per phase figure obtained from the national code method were considerably and consistently lower.

After giving full consideration to the above facts, it was decided to calculate the size of each lighting feeder employing the three different methods; 1st, the actual possible connected load, 2nd, using the New York City Electrical Code requirements and 3rd, following the recommendations of the latest National Electrical Code. The last results were only of

(Continued on page 128.)

CHRYSLER BUILDING

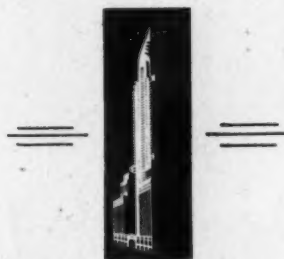
WIRE PULLING LABOR SAVERS



Approximately 50% in time is saved in attaching wires to the snake by using a wire grip. Four or five wires can be inserted in one of these grips with little effort. It eliminates the tedious method of skinning the wires and attaching them to the snake.



The wire grip on its way carrying four wires on a long pull. To date more than 500,000 ft. of wire have been pulled on this job and only twelve wire grips have been used, most of which are still in service.



The movable reels in action. When it is set down the front reel clears the floor by about $\frac{1}{4}$ in.

A set of movable wire reels was designed wheelbarrow fashion as shown. The front reel acts as wheel.

How the High Tension DROPPED in

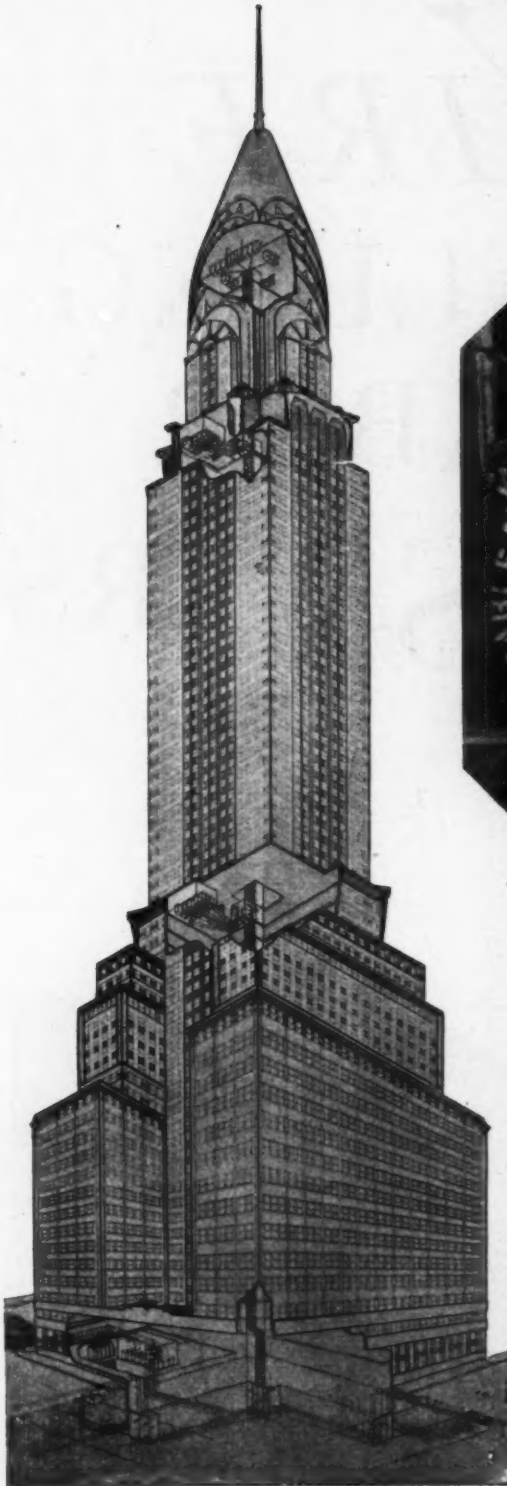
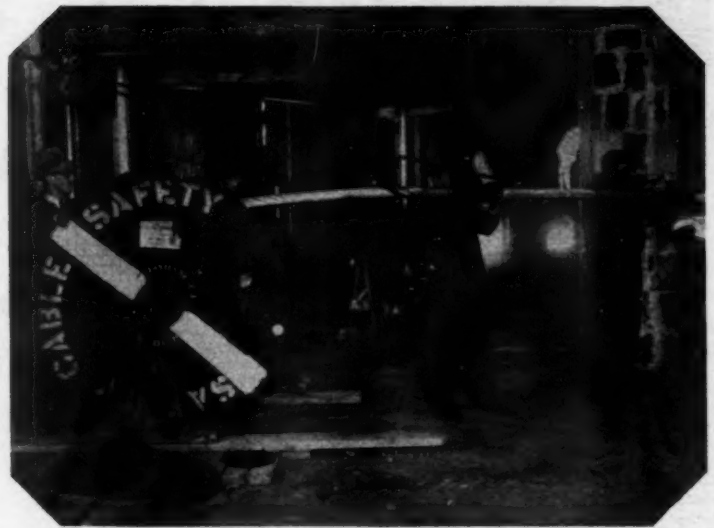


Diagram of the vertical network distribution showing location of the transformer vaults in the basement and on the 30th, 60th, and 72nd floors.



Emergency cable snubbing arrangement. In dropping the cable for the 60th floor vaults, the cable was taken up to the 62nd floor as here shown. After leaving the supply reel the cable ran over an empty reel located directly over the conduits.



High tension feeder conduits before being enclosed in masonry.

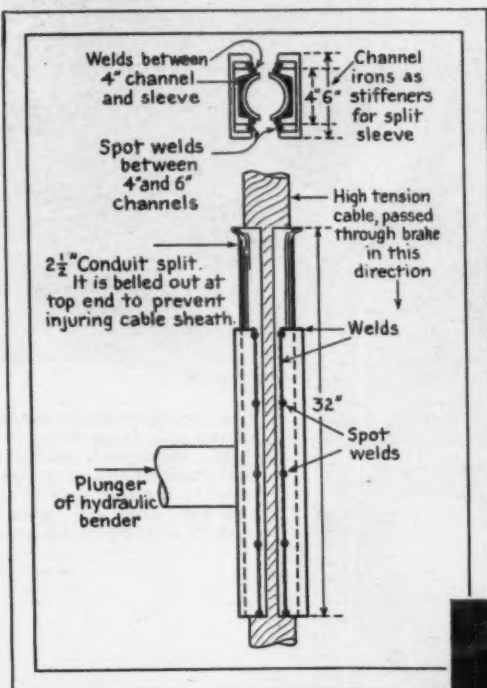


FEEDERS *were*

in World's Tallest Building



A real problem was presented in obtaining an easily controllable brake which would in no way injure the cable. As illustrated here a successful adaptation of a hydraulic pipe bender was used. The pipe bending shoes were removed and reenforced split sleeves were substituted.



Drawing of the brake sleeve showing its construction. The actual sleeve consisted of a piece of $2\frac{1}{2}$ in. conduit 32 in. long which was split and belled at the upper end. To each half was welded a piece of 4 in. channel iron and to this channel iron was spot welded a piece of 6 in. channel iron.

Manner of suspending 30 floors of 3-conductor armored cable from one clamp at the upper end of the vertical conduit run, which was without elbows or offsets. The armor is stripped back and passed around the middle member of the clamp which has rounded edge. The middle picture shows armor strands again brought back through hole in upper member. The right hand picture shows completed clamping.



Chrysler Building Has Fin Installing U



The first step after the cement pad has been laid is to accurately mark with a chalk line the location of the duct.



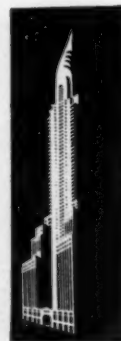
The junction boxes and elbows are then set and their locations marked thus making it easy to relocate them if they are knocked out of place when laying the duct.



The duct is then laid along the chalk lines.



Sawing fiber duct consumes a lot of time. This unique and successful method of cutting duct was devised on this job. It simply consists of a semi-circular bladed chisel and a concave anvil conforming in shape to the interior and exterior of the duct. A single sharp blow of the hammer cleanly cuts the duct at any desired angle.



A Fine Example of Efficiency and Workmanship in

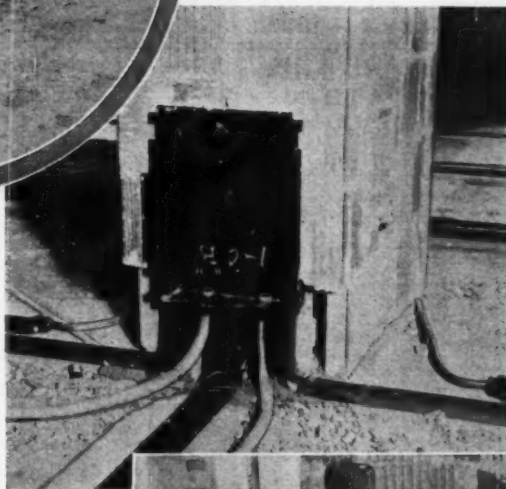
Underfloor Duct



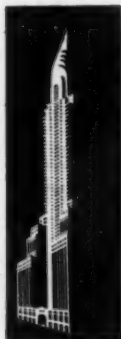
The entire system is sealed with waterproof compound. The man doing the sealing follows as closely as possible to the laying crew thus reducing the risk of the duct being knocked out of place.



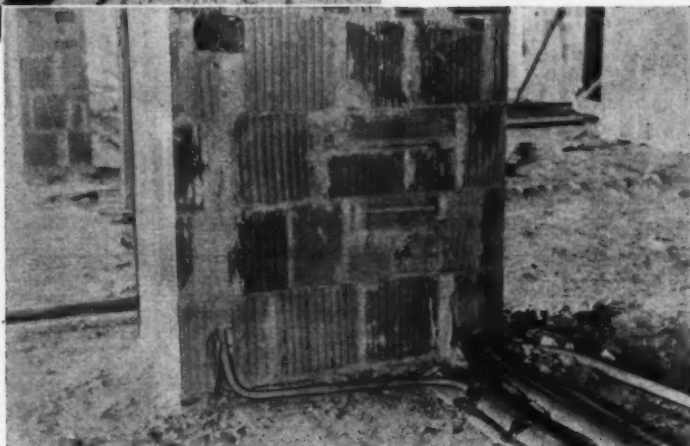
The box rings are adjusted to the floor level prior to the laying of the concrete fill.



The low tension ducts are brought into interconnection cabinets. The power and light ducts are tied to the ceiling system by means of conduit to the switch boxes.



A view of the conduit connection between the duct and the ceiling system through the switch box.



3RD INSTALLMENT

Motor Wiring Tables

Compiled by
A. L. ABBOTT

Tables covering direct current, single phase, all types of 2-phase and 3-phase wound rotor and 3-phase high reactance type squirrel cage induction motors appeared in the previous issues. The tables will be concluded in the next issue with 2200-volt motors of all types. In these tables will be found complete wiring information for any commercial motor in the commonly used sizes.

TABLE 6. 3-PHASE SQUIRREL CAGE INDUCTION MOTORS

Voltage	H. P.	Full Load Amperes	Size Wire Gage No. or Circ. Mils.			Size Conduit	Running Protection		Max. Rating Branch Circuit Fuses		Voltage Drop per 100 ft. (Single Distance) Percent
			Rubber Covered	Varnished Cambric	Slow-Burning		Max. Fuse Rating** Amperes	Max. Setting Time Limit Protective Device Amperes	Full Voltage Starting Amperes	Reduced Voltage Starting Amperes	
110	1/2	5.0	14	14	14	1/2	8**	6.25	15	15	2.1
	3/4	5.4	14	14	14	1/2	8**	6.75	20	15	2.2
	1	6.6	14	14	14	1/2	10**	8.25	20	20	2.7
	1 1/2	9.4	14	14	14	1/2	12**	11.75	30	25	3.9
	2	12.0	14	14	14	1/2	15**	15.00	40	30	5.0
208	1/2	2.7	14	14	14	1/2	4**	3.50	15	.....	.59
	3/4	3.0	14	14	14	1/2	4**	3.75	15	.....	.66
	1	3.5	14	14	14	1/2	6**	4.50	15	.....	.77
	1 1/2	5.0	14	14	14	1/2	8**	6.25	15	15	1.1
	2	6.4	14	14	14	1/2	8**	8.00	20	20	1.4
	3	9.5	14	14	14	1/2	12	12.00	30	25	2.1
	5	16	12	12	14	3/4*	20	20.00	50	40	2.2
	7 1/2	23	8	10	10	1*	30	29.00	70	60	1.25
	10	29	6	8	8	1 1/4*	40	36.50	90	80	1.0
	15	40	6	6	8	1 1/4*	50	50.0	125	80	1.4
	20	55	4	4	6	1 1/4	70	69.0	175	110	1.2
	25	68	2	4	4	1 1/2	90	85.0	225	150	.92
	30	82	0	2	2	2	110	102.5	.....	175	.70
	40	107	00	0	1	2	150	134.0	.....	225	.72
	50	133	000	00	0	2	175	166.5	.....	300	.71
	60	158	0000	000	0	2 1/2	200	197.5	.....	350	.67
	75	191	250,000	0000	000	2 1/2	250	239.0	.....	400	.69
	100	260	400,000	300,000	0000	3	350	325	.....	600	.59
	125	330	600,000	500,000	350,000	3 1/2	450	413	.....	660***	.50
	150	382	700,000	500,000	400,000	3 1/2	500	478	.....	764***	.49
	200	509	1,000,000	800,000	600,000	4	.....	637	.....	1018***	.46

*Conduit one size smaller may be used under certain conditions. N. E. C. 503-q.

**Motors of 2 H. P. or less may be protected by branch circuit fuses only. N. E. C. 808-A, exception (1).

***Circuit-breaker settings. Fuses not permitted. N. E. C. 805-1.

TABLE 6. 3-PHASE SQUIRREL CAGE INDUCTION MOTORS—Continued

Voltage	H. P.	Full Load Amperes	Size Wire Gage No. or Circ. Mils			Size Conduit	Running Protection		Max. Rating Branch Circuit Fuses		Voltage Drop per 100 ft. (Single Distance) Percent
			Rubber Covered	Varnished Cambric	Slow-Burning		Max. Fuse Rating** Amperes	Max. Setting Time Limit Protective Device Amperes	Full Voltage Starting Amperes	Reduced Voltage Starting Amperes	
220	1/4	2.5	14	14	14	1/4	4**	3.25	15	.....	.5
	3/4	2.8	14	14	14	1/4	4**	3.50	15	.....	.6
	1	3.3	14	14	14	1/4	6**	4.25	15	.....	.7
	1 1/2	4.7	14	14	14	1/4	8**	6.00	15	15	1.0
	2	6	14	14	14	1/2	8**	7.50	20	15	1.2
	3	9	14	14	14	1/2	12	11.25	30	25	1.9
	5	15	12	12	14	1/2	20	18.75	45	40	2.0
	7 1/2	22	8	10	10	1*	30	27.50	70	60	1.1
	10	27	8	8	8	1*	35	34.00	80	70	1.4
	15	38	6	6	8	1 1/4*	50	47.5	125	80	1.2
	20	52	4	4	6	1 1/4	70	65.0	175	110	1.1
	25	64	3	4	4	1 1/4	80	80.0	200	150	1.0
	30	77	1	2	3	1 1/2	100	96.0	.....	175	.8
	40	101	0	0	2	2	125	126.0	.....	200	.9
	50	125	000	00	0	2	175	156.5	.....	250	.6
	60	149	0000	000	0	2 1/2	200	186.0	.....	300	.6
	75	180	0000	0000	00	2 1/2	225	225.0	.....	400	.7
	100	246	400,000	300,000	0000	3	300	308	.....	500	.5
	125	310	500,000	500,000	300,000	3	400	388	.....	620***	.5
	150	360	600,000	500,000	350,000	3 1/2	450	450	.....	720***	.5
	200	480	900,000	700,000	500,000	4	600	600	.....	960***	.5
440	1/4	1.3	14	14	14	1/4	2**	1.75	15	.....	.14
	3/4	1.4	14	14	14	1/4	2**	1.75	15	.....	.15
	1	1.7	14	14	14	1/4	3**	2.25	15	.....	.18
	1 1/2	2.4	14	14	14	1/4	3**	3.00	15	15	.25
	2	3.0	14	14	14	1/2	4**	3.75	15	15	.31
	3	4.5	14	14	14	1/2	6	5.75	15	15	.47
	5	7.5	14	14	14	1/2	10	9.50	25	20	.8
	7 1/2	11	14	14	14	1/2	15	13.75	35	30	1.1
	10	14	12	14	14	1/2	20	17.50	45	35	.9
	15	19	10	12	12	3/4	25	23.75	60	50	.8
	20	26	8	8	8	1*	35	32.50	80	70	.7
	25	32	6	8	8	1 1/4*	40	40.00	100	70	.5
	30	39	6	6	8	1 1/4*	50	49.0	.....	80	.6
	40	51	4	4	6	1 1/4*	70	64.0	.....	110	.5
	50	63	3	4	4	1 1/4	80	79.0	.....	125	.5
	60	75	1	3	3	1 1/2	100	94.0	.....	150	.38
	75	90	0	1	2	2	110	112.5	.....	200	.36
	100	123	000	00	0	2	175	154.0	.....	250	.31
	125	155	0000	000	0	2 1/2	200	194	.....	350	.31
	150	180	0000	0000	00	2 1/2	225	225	.....	400	.36
	200	240	350,000	250,000	0000	3	300	300	.....	500	.29
550	1/4	1.0	14	14	14	1/4	2**	1.25	15	.....	.08
	3/4	1.1	14	14	14	1/4	2**	1.50	15	.....	.09
	1	1.3	14	14	14	1/4	2**	1.75	15	.....	.11
	1 1/2	2.0	14	14	14	1/4	3**	2.50	15	15	.17
	2	2.4	14	14	14	1/2	3**	3.00	15	15	.20
	3	4.0	14	14	14	1/2	6	5.00	15	15	.33
	5	6	14	14	14	1/2	8	7.50	20	15	.50
	7 1/2	9	14	14	14	1/2	12	11.25	30	25	.75
	10	11	14	14	14	1/2	15	13.75	35	30	.91
	15	15	12	12	14	1/2	20	18.75	45	40	.78
	20	21	8	10	10	1*	30	26.25	70	60	.43
	25	26	8	8	8	1*	35	32.50	80	70	.54
	30	31	6	8	8	1 1/4*	40	39.0	.....	70	.40
	40	40	6	6	8	1 1/4*	50	50.0	.....	80	.52
	50	50	4	4	6	1 1/4	60	62.5	.....	100	.41
	60	60	3	4	4	1 1/4	80	75.0	.....	120	.39
	75	72	2	3	4	1 1/2	90	90.0	.....	150	.37
	100	98	0	0	2	2	125	122.5	.....	200	.32
	125	124	000	00	0	2	175	155	.....	250	.25
	150	144	0000	00	0	2 1/2	200	180	.....	300	.23
	200	195	250,000	0000	000	2 1/2	250	244	.....	400	.27

Electrical Contracting

With Which Is Incorporated The Electragist

S. B. WILLIAMS
Editor

Invite the Man Next Door

AT the annual meeting of the Toledo Electrical Contractors' Association more than a dozen visiting contractors were present from four or five neighboring Ohio cities. The visitors took home with them a new idea in association work, while the home folks got a little clearer view of the importance of belonging.

Perhaps other associations will see their way clear to sending invitations to contractors in neighboring towns to attend some of their meetings. It's a fine idea and can be productive of a lot of good.

Code Demand Factors

TWO years ago the National Electrical Code first recognized demand factor as a basis for feeder design. It was hoped that in this way the cost of wiring could be lowered without reducing the safety factor.

And now we are beginning to open our eyes to the need for larger wire sizes to take care of future demands for service.

In designing the feeders for the new Chrysler Building in New York it was found that feeders based on the demand factors in the Code were woefully inadequate. A number of comparatively new office buildings have had to be rewired recently because of insufficiency of copper.

Higher lighting intensities, new uses for electricity—are we to ignore these “coming events” when designing? If it were only the copper it would not be so bad because it is easy enough to pull in larger sizes. But conduit sizes are based on wire sizes, and it is no easy task to put new conduits in a completed building.

Perhaps the Electrical Committee in the

next revision of the National Electrical Code will give further attention to demand factor values.

Lost: A Market Development Program

WHAT has happened to the market development program of the Industry Sales Conference?

It was three years ago April that the Industry Conference on Wiring, after careful study, recorded the fact that a co-ordinated sales effort was necessary to develop the market properly and recommended that an Industry Sales Conference be set up.

Representatives from the national organizations of power companies, manufacturers, jobbers, contractors and leagues met and gave a lot of time and thought to a recommended market development program. An advertising agency was employed to make a preliminary market survey. Its report has been on file for over a year.

Originally millions were talked of for market development and finally this dwindled to but a fraction of a million and now where is the fraction?

What killed the market development program? All were agreed on the need for one. Certainly the Industry Sales Conference worked and did not bring in its recommendation until it was satisfied they were right.

Was it distrust of one group for another? Was it selfishness on the part of any single group? Was it because there were not enough of the real “yes” men on the committee? Was it because the groups could not or would not reconcile their views?

Or was it just another example of the inability of the electrical industry ever to get together as a whole to do a job for the common good?

No Inspection for Janitors

A FEW days ago we received some pictures of actual installations of wiring in apartment houses. They were almost nauseating.

The buildings were inspected when brand new and then left to the tender mercies of a janitor. What folly!

We inspect the work of trained mechanics and insist on the close observance of the wiring rules on new work but pay no attention to the wiring put in by coal and ash shovelers, floor washers, brass polishers, garbage collectors and what have you.

We, of the industry, sit smugly by and think that the world is safe for wiring when we have passed a new ordinance or brought out a new edition of the National Electrical Code. The wonder is that city after city doesn't go up in flames because of the unhealthy condition of its wiring.

If ever a safety measure was needed it is reinspection. Over 50 percent of the premises wired three or more years have defective wiring that is dangerous. The chief inspector of one city of some size reported 100 percent—and we twiddle our thumbs.

When we ask what is holding back reinspection the reply is "men and money." Whose fault is that? Reinspection will pay its way; but somebody must put a bombshell under the city council. This is a combined job for the inspectors and the contractors.

To be selfish—thar's gold in them thar defectives. In every city there are thousands upon thousands of dollars of business for electrical contractors repairing defective installations.

Strike at the Root

FROM time to time contractors in different cities, harrassed on every side by the worst kind of competition, have banded together and set up machinery to eliminate all competition. Prices have been fixed; jobs have been allocated; heavy license fees have been levied; and so on.

Aside from the fact that such practices are unfair and illegal, they are unsound and are not in the best interests of those employing them. Competition cannot be destroyed or eliminated so long as there are human beings.

Instead of striking at competition we should aim our blows at the causes of the unsatisfactory condition. Electrical contractors need competition but it must be better competition—competition based on equal opportunity.

What makes the opportunity so unequal today? Cannot many of them be found in the following list?

Poor regulation of credits on the part of jobbers, making it possible for a contractor to sell his work at any old price, knowing that he can pay when he gets another job.

Inadequate plans and specifications making it virtually impossible for any two contractors to figure on the same layout.

Inadequate inspection to assure owner that he is getting the job he ordered.

No policy in the business concerning fair charges for extras.

Insufficient knowledge of costs—both overhead and labor.

Too much of the gambling spirit.

Unfair tactics on the part of those interstate operators who jump into a city and take the one or two plums and get out, but in the meantime demoralize prices.

Small operators trying for big work, that they are not equipped financially, by experience or equipment to handle.

No firm policy with respect to general contractors.

There are others, of course, but these should be enough to point the way. Destroy these wasteful and unsound practices and competition will be fairer.

So Very Simple

A NEW and very simple way is being proposed for eliminating the substandard wiring device evil. Instead of having Underwriter's Laboratories, an unbiased institution with national standards based on almost unlimited experience, continue to function as the authority, all devices are to be approved.

Of course, some devices will be better than others, so in order to give quality its due a recognized laboratory will make tests and give materials and devices a rating. Imagine what would happen if a manufacturer who thought he had an "A" device received a "B" rating? Imagine the manufacturers even agreeing to different standards of quality based upon laboratory tests?

How simple—almost as simple as the thinking of those on the quest for the cheapest of wiring materials.

Code Chats

A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the National Electrical Code - - -

Conducted by F. N. M. SQUIRES

Assistant Chief Inspector, N. Y. Board of Fire Underwriters

Correlating Committee for Code Revisions

In order to relieve the Electrical Committee, N. F. P. A., of detail and make its meetings open where opinions can be expressed and principles discussed, it was decided at its annual meeting on February 19 to set up a correlating committee of the chairman of the Electrical Committee and ten members, the membership of which shall be elected by the main committee.

A proposal that procedure be set up for trial installations of new methods not covered by the Code was referred to a committee. It was decided, however, that wherever the subject matter was not in controversy it could be sent to the Electrical Committee for mail ballot and upon approval it would become a part of the Code until the next annual meeting. Matter in controversy is to be submitted to the proper article committee.

Victor H. Tousley, field engineer, was elected secretary of the Electrical Committee, thereby becoming secretary of the correlating committee.

Membership

The membership of the correlating committee shall include one representative for each of the following co-operating bodies: Stock fire insurance inspection bureaus, mutual insurance organizations, light and power group, N. E. M. A., I. A. E. I., A. E. I., one member connected with a municipal, state or provincial office and three members-at-large.

This committee is to meet annually not later than February 1 and at the call of the chairman shall meet after

the February meeting of the Electrical Committee to edit and give effect to the action of the latter.

The correlating committee is to review article committee reports as to form and wording and as to ways and means of reconciling conflicts and inconsistencies and is to furnish the Electrical Committee with such information as will facilitate its annual February meeting.

* * *

Gas Tube Sign Installation

Article 38 covers sign construction and installation, with most of which we are familiar. Attention, however, is called to rule 3801 (b):

Signs and outline lighting which employ vacuum or inert gas tube

systems shall, in addition to the requirements of this Article, comply with the provisions of Section 5002 of this Code.

Referring to rule 5002, paragraph (f) in particular, we find that "enclosures for transformers, regulating coils, and tube terminals shall, for indoor installation having live parts exposed within the cabinet, be arranged so that the door of the enclosure cannot be opened without breaking the primary circuit."

Referring again to Article 38, under 3806 (a) the rule reads: "Signs, troughs and other metal frames shall be grounded as provided in Article 9 of this Code, unless these are insulated from ground and are inaccessible to unauthorized persons." Inaccessible, in this case, really means isolated as defined by



HEADS TULSA CONTRACTORS:—H. B. Rickard, Rickard Electric Co., Tulsa, Okla., has been elected president of the local Electrical Contractors' Association. In his business he does much industrial work and this photograph shows him with one of his installations in a candy factory. He also maintains a fine store and has three trucks.



THE NEW PLANT OF THE JOHN DEERE TRACTOR WORKS, WATERLOO, IOWA, U.S.A.

O. H. Eckerman, Architect, Moline, Illinois
 Max Sklovsky, Engineer, Moline, Illinois
 Sweetman Electric Co., Electrical Contractor, Waterloo, Iowa.

Another Trail Blazing Industrial

Pays Tribute to TRICO with a 100% Installation

The internationally known John Deere Tractor Works are completely equipped with

TRICO Renewable FUSES

They're "Powder-Packed"

Located at Waterloo, Iowa, on 80 acres of ground, this notable industrial with a historical background, occupies 33 acres of floor space (1,437,480 square feet). For the enormous amount of machinery and equipment distributed over this vast area, and for an institu-



Approved
by
Underwriters

tion of such high character, electrical protection must be—dependable! And so TRICO Renewable Fuses were installed.

This tribute to TRICO further strengthens the confidence that electrical engineers have in the dependable and economical performance of TRICO Renewable Fuses.

Money-Saving TRICO Factors

- No Premature Blowings
- No Unnecessary Shutdowns
- No Oxidized Contacts
- No Charred Casings
- Copper-to-Copper Contacts
- Reduced Watt Loss
- Time Lag

And they cost no more than other makes of renewable fuses

TRICO FUSE MFG. CO., 1007 McKinley Ave., Milwaukee, Wis.



RENEWABLE FUSES—PLUG FUSES—NON-RENEWABLE FUSES—FUSE PULLERS

Article 1 and not the antonym of accessible as defined by the Code.

Therefore, we have in the case of indoor gas type signs two specific rules that shall be followed. In the grounding of the portable type signs, a triple conductor cord is recommended. We will, however, accept the armor of an armored flexible cord as a grounding conductor, provided the armor is bonded to the metal enclosure in addition to the usual coupling, and is in turn bonded and connected to the grounding terminal of a pole plug.

When the grounding conductor of a 3-wire cord is used it should be soldered into a lug and the lug firmly bolted to the interior of the enclosure, or secured to the enclosure by other means acceptable to Underwriters' Laboratories, for approved type signs and it is assumed that the Laboratories will not approve indoor type signs unless suitable provision for grounding is provided.

The grounding and installation of the sign, however, is a matter under which the Laboratories have no control, so inspectors should be on the lookout for this feature.

GEO. WELMAN.



HEAVY POWER AND INDUSTRIAL WORK THEIR SPECIALTY:—The Fife-Pearce Electric Co., Detroit, Mich., maintains an imposing and well-kept store in addition to carrying on an extensive construction business. A large part of the work consists of motor service and sales and industrial installations. Behind the counter in this picture are Harry B. Fife and M. A. Pearce. The shop and motor stock can be seen at the rear.

Rating of Generator Protective Devices

Article 10, section 1002, paragraph E, states that 3-wire D.C. generators, compound or shunt wound, should be equipped with protective devices in the armature leads, connected so they will be actuated by the entire current from the armature. What capacity of the generator is to be considered

under the rule for the armature protection?

The Code does not specify at what percentage of the generator capacity the protective devices called for in 1002-e are to be rated. Of course a generator will deliver safely 100 percent of its normal rated capacity and, therefore, the protective devices need not be less than that. Section 805-c (2) and (3) provides that, in general, time limit circuit breakers shall be adjusted to operate at not over 110 percent of the capacity which they are to protect and instantaneous circuit breakers at not over 160 percent. Probably, then, with nothing more definite to go on, these values should not be exceeded in the circuit breaker settings on generator leads.

* * *

Service from Two Transformers in One Conduit

Is it permissible to use the same service pipe for light and power service wires fed by two separate transformers off the same primary? This is in regard to a single phase proposition.

It is considered permissible to use the same service conduit for enclosing the wires in a case such as the above. This interpretation is based on the fine print note of Section 503-n, as in the case mentioned the two transformers are not connected to separate primary circuits, nor have they different secondary voltages inasmuch as the power voltage is 220 and the lighting voltage 110-220.



COMPACT AND FLEXIBLE STOCK ROOM: The stockroom of the Laube Electric Corporation, Rochester, N. Y., is equipped with all steel shelving and bins. This organization which has been in business nearly 24 years and is widely known as "Rochester's Electrical Department Store," has besides its store with a display of more than a thousand lighting fixtures, a large wiring division employing seventy wiremen. Among its recent installations are the Benjamin Franklin High-School, the third addition to the new Stromberg-Carlson plant, the Ritter Dental addition, several new buildings in the new University of Rochester group and the new Masonic Temple, as well as a large number of fine residences.



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40 years of
 quality..... at
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A complete line, constantly
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"ALABAX" Porcelain Lighting Units are in a class by themselves. . . . More style and dash and they harmonize perfectly with the most refined surroundings. . . . A variety of color decorations. . . . Brackets equipped with pull chains offer the advantage of individual control even though a wall switch is used.

"ALABAX" devices are impervious to the effects of heat, moisture or bright sunlight. They are clean and sanitary and may be obtained in a wide variety of styles and colors. Brackets and hangers retain their beautiful "fired-in" lustre indefinitely. A few brisk rubs with a damp cloth and they are as spotless as new. Easy to sell and install. Write for catalog No. 29 illustrating the complete Pass & Seymour profit line.



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UMI



A. E. I.

News and Service Information

*Material for this department is supplied by the headquarters staff of the Association of Electragists, International,
420 Lexington Avenue, New York, N. Y.*

Executive Committee Meeting

The A.E.I. Executive Committee will hold its mid-winter meeting on March 10 and 11, in New York City. A.E.I. members are invited to submit any matters they desire brought before the committee through their respective divisional and sectional executive committees, as follows:

Eastern Division, Allan Coggeshall, New York City.
Southern Division J. A. Fowler, Memphis, Tenn.
Southeastern Division W. W. Ingalls, Miami, Fla.
Great Lakes Division, J. H. Busby, Detroit, Mich.
Central Division, F. T. Langford, Minneapolis, Minn.
Mountain Division, G. R. Randall, Salt Lake City, Utah.
Pacific Division, C. L. Chamblin, San Francisco, Calif.
Eastern Canadian Division, R. A. L. Gray, Toronto, Ont.
Western Canadian Division, J. H. Schumacher, Winnipeg, Man.
Union Shop Section, L. K. Comstock, New York City.
Open Shop Section, S. J. Stewart, New Orleans La.

* * *

New Wisconsin Chapter

Electragists of Watertown, Wis., have been granted an A.E.I. charter as the Watertown Chapter. Arthur Reusch has been elected chairman, H. F. Walloch, vice chairman, and George Wilke, secretary-treasurer.

Frank M. O'Meara, field representative of the A.E.I. and Edwin H. Herzberg, business manager of the Milwaukee Chapter have recently visited a number of cities in southern Wisconsin, where a lively interest in A.E.I. Chapter organization is developing. Their work

resulted in a number of local contractors' meetings being held and preliminary steps taken to form chapters in Kenosha, Racine and several other cities. Wisconsin electragist leaders are hopeful of a sufficient number of chapters being formed this year to make possible the organization of a state association of electragists.

* * *

Overhead Cost Records

Each year the A. E. I. receives a large number of operating statements reported voluntarily by

members for the previous year's business. An analysis of these reports submitted during 1929 stresses the importance of every contractor determining his overhead costs and the relation they bear to his sales and gross margin.

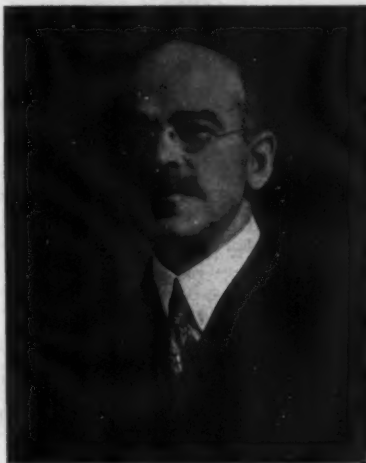
Quite frequently inquiries are received from contractors desiring an average overhead figure, expressed as a percentage of prime cost or sales, on which to base their own operations. The unreliability of an average overhead percentage applied in the individual case cannot be over-emphasized. Convenient forms are available from the A. E. I. for recording overhead costs and tabulating their relation to other operating factors at regular intervals.

* * *

Motor Specialists Meet in Milwaukee

The mid-winter motor specialists' meeting held in Milwaukee, February 3, brought representatives from many cities to hear the reports of the AEI Motor Section Committee and motor specialist chapters, and to discuss plans for national organization of the re-motorization campaign.

Progress being made in the formulation of policies designed to stimulate aggressive business-building by franchised Motor Specialists and to eliminate trade practices resulting in distribution wastes was enthusiastically reported and received. Chairman Louis Kalischer outlined the steps being taken to organize nationally the industrial re-motorization movement already



TORONTO'S OLDEST CONTRACTOR MOVES:—R. A. L. Gray & Co., the oldest electrical contracting firm in Toronto, having been in business for thirty-three years, has moved from 85 York St., where the company was located for thirty years, to 157 King St., W. The new location has a fine showroom, together with a stockroom and workshop. R. A. L. Gray has for many years represented the eastern Canadian Electragists on the Executive Committee of the A.E.I.

launched locally by the New York Motor Specialists Chapter as the initial activity in the market development program of the Electrical Association of New York. The delegation of motor specialists from Chicago expressed appreciation of the substantial work the AEI Motor Section is doing and will proceed as rapidly as possible to form a chapter.

Meet Manufacturers

Following the morning session, a conference of the Joint Committees on Motor Merchandising of the National Electrical Manufacturers Association and the AEI Motor Section occupied the remainder of the day. Among the manufacturers' representatives attending were Messrs. Stroman of the Westinghouse Electric and Manufacturing Co., Russell of the Century Electric Co., Pitman of the General Electric Co., and Hockhouse of the Allis-Chalmers Manufacturing Co.

Of importance to all motor specialists was the conference's recognition of the need for adequate margins on standard stock motors, including fractional horse-power, to provide for necessary selling effort; and of the principle of appropriate compensation to motor specialists selling or assisting in the sale of large motors over 200 horse-power,

synchronous and arc-welding equipment, transformers, switchboards, meters, instruments and accessories.

The conference considered favorably an increased margin on repair parts based on the relatively high expense of maintaining stocks sufficiently complete for immediate service to consumers.

Discussion of the activities of manufacturers' local service shops resulted in re-affirming the policy previously laid down that a manufacturer maintains such a shop primarily for the servicing of his own products, and that aggressive selling effort to secure general repair business shall be discontinued where it is detrimental to the legitimate interests of motor specialists. It was pointed out that unsatisfactory local conditions resulting from a disregard of this policy should, and usually can be corrected through negotiation between the local service shop executives and the motor specialist chapter.

The joint committee will meet again at the Electragists' annual convention in Milwaukee next August.

* * *

Support of Capper-Kelly Bill Urged

Executives of all A.E.I. Chapters have been advised that the Capper-

Kelly Fair Trade Bill (H.R. 11), favorably reported to the House of Representatives during January by the Committee on Interstate and Foreign Commerce, will probably come before the House for vote early in March. This measure would legalize the maintenance of resale prices by manufacturers on their standard trade-marked products, and A.E.I. has urged all its chapters to communicate promptly with their district representatives, requesting their support of the bill.

* * *

Electragists Represented at Code Meeting

Representing the A.E.I. on the Electrical Committee of the N.F. P.A., Allan Coggeshall, A. C. Brueckmann and R. A. Goeller attended the annual meeting of the committee in New York City on February 18 and 19. The meeting was given over largely to progress reports of various article and standing sub-committees and to consideration of matters of procedure following the re-apportionment of representation of co-operating bodies announced in December.

The assignments of A.E.I. representatives to article sub-committees of the Electrical Committee were given in the January issue of *ELECTRICAL CONTRACTING*.

NEW MEMBERS

The following applicants have been accepted into the A.E.I. since publication of the list in the February issue:

CALIFORNIA

Los Angeles:

Alert Electric Co.
Britway Electric Co.
Central Electric Co.
Walter West Electric Co.

Oakland:

Wired Heat Shop

San Pedro:

Geo. J. Haddix
Howe Electric Co.
McWhinnie Electric Co.
Pierson & Boren Electric Co.
Port Electric Co.
Wolfe Electric Co.

Santa Ana:

Gilbert-Weston-Stearns Co.
Santa Ana Electric Co.

Santa Barbara:

F. W. Huston
The Nielson-Smith Electric Co.

Terminal Island:

Terminal Island Electric Co.

Wilmington:

Electrical Machine Service Co.
Mark Johnson
Wilmington Electric Co.
C. C. Macomber
C. W. McKean

ILLINOIS

East St. Louis:

Lowry Electric Co.

GEORGIA

Atlanta:

Burtchaell Electric Co.

NEW YORK

Kingston:

Electric Service League of Kingston

OHIO

Cincinnati:

The Fogarty Electric Co.

PENNSYLVANIA

Coatesville:

Carl B. Sherer

Denver:

Milton G. Steffey

Ephrata:

Mentzer Electric Co.

Lancaster:

C. Roy Barr

Conesloca Electric Co.

Arthur M. Dean
L. R. Keperling
John M. Lippold
H. Clay Miller
J. Keeley Myers
W. C. Pyle

Marietta:

W. H. Stulzbach

Millersville:

Milton B. Hess

TENNESSEE

Knorrville:

Acme Electric Co.

WISCONSIN

Milwaukee:

Delmar Electric Co.
Sternlieb Electric Co.

Quicker
renewals..
withstand
more
blowouts...



Knife-blade type Union Renewable Fuse. Note the simple design and rugged construction. Also that the link is notched for quick renewal.

UNION FUSES



New ferrule type Union Renewable Fuse. Note the few parts and lack of loose washers—all of which makes for quicker renewal.

WHEN machines stand idle because of a "blown" fuse, you realize forcibly the value of using a fuse that can be renewed quickly. Union Renewable Fuses are designed with "quick renewability" foremost in mind.

The new ferrule type is declared by users to be the simplest and easiest to renew of all ferrule type fuses. It has but three parts . . . two end caps and a casing . . . besides the renewable link. The link is supplied bent at one end, automatically adjusting the length and assuring perfect fit.

The knife-blade type is just as easy to renew. It is simple in design and has but few parts. The fusible link is notched at both ends and can be replaced when studs are only slightly loosened.

Both of these types of Union Renewable Fuses have casings vented by an exclusive method to relieve the pressure generated by blowing. They withstand blowout after blowout without injury to any of the parts.

Other Union advantages are fully explained in Catalog No. 33. The Union Fuse Selection Chart, which will be sent to you free, shows at a glance the proper fuse for low cost protection of all motors. Write for both. We shall be glad to tell you which wholesalers handle Union Renewable Fuses in your territory.

JEFFERSON ELECTRIC COMPANY

1503 West 15th Street

Chicago, Ill.

(A1001)

In the Editor's Mail



Old Timer Gives Good Advice

Editor,
ELECTRICAL CONTRACTING:

I am retiring from business. I commenced forty-one years ago and it is a young man's game. Hereafter, I am going to sit on the fence and criticize and sigh for the old days.

Possibly if there had been a trade paper as good as "E. C." in my earlier days, I should have made fewer mistakes. However, I would not swap my experience in the electrical game for all the rest of the world.

My advice to every young man in the business will be, "Read ELECTRICAL CONTRACTING." I thank you.

J. E. MARSHALL,
Henniker, N. H.

* * *

Not How Cheap But How Good

Editor,
ELECTRICAL CONTRACTING

I have read your article in the February issue of ELECTRICAL CONTRACTING on "What Does it Cost to Wire a Range" with considerable interest.

I also notice you have typical layout for range installation. In some places a contractor might "get by" with such a job, but not in Rensselaer. The light and power superintendent is very exacting on wiring of all descriptions, and I thank God he is.

Here we have to use 1¼ in. gal-

vanized conduit throughout on range work; no armored cable is permitted. I do not try to see how cheap I can do work, but try to make one job get me another by the class of work I do.

I use Appleton, or Crouse-Hinds condulets. For entrance fittings I use Appleton's 1970 at the top and 1793 at the bottom. I use Trumbull switches, one in basement and one at range (this is required here). No wire smaller than No. 6 stranded may be used. We use a six wire meter, which makes it necessary to use two extra soldering lugs on the potential wires.

You state that the power companies say the prices charged by the electrical contractors is robbery. I wish to state right here that the way the power companies install ranges is a crime. They care nothing about making money on installations. All they care about is building up their load and a source of revenue.

For my part I would like to see the manufacturers refuse to sell the power companies ranges, and also to see a law passed prohibiting power companies from doing any house wiring of any description. They take thousands of dollars annually from the electrical contractor who must pay for his license before he can work.

I think a contractor who tries to see how cheap he can install ranges will be out of business in a course of time. E. C. Simmons "hit the nail on the head" when he said "The recollection of quality remains long after the price is forgotten."

L. C. RHOADES,
Rensselaer, Ind.

Has 1880 Lamp That Burns

Editor,
ELECTRICAL CONTRACTING:

Noticing an account in your February issue that a party has a lamp with a date 1890, I wish to say that I have one with the date 1880, on the label, and this bulb also burns.

I also have lamps with T. H. and Westinghouse bases, and the sockets for them, and these bulbs also burn.

H. E. ENTLER,
Chicago.

* * *

Wants Overhead Data

Editor,
ELECTRICAL CONTRACTING:

Have you data on the overhead expense of a contractor-dealer doing business in a town of say 20,000 population and an annual volume of sales of say \$50,000 to \$60,000?

We are trying to check up our own overhead with that of other dealers similarly situated.

We would also like to ask various dealers to tell confidentially their experiences with radio, refrigeration and oil burners; it would not of course, be permissible to publish names of those replying, but I believe some interesting data could be gathered by this.

I have often felt we could pay a pretty good membership fee in a research organization composed of firms like ourselves to whom we could look for advice before embarking on any new lines and often methods of handling lines we already have.

It seems as though some such clearing house for information would be worth a lot of money.

E. M. RAETZ,
Rochester Elec. Co., Rochester, Minn.

[If any of our readers have information that might interest Mr. Raetz please send it direct.—Editor.]

* * *

Lost Outlets

EDITOR,
ELECTRICAL CONTRACTING:

I am writing you in regard to the item regarding plastering outlet boxes as mentioned on page 32 of the February issue of ELECTRICAL CONTRACTING.

We have had considerable trouble and still have, for that matter, because of the fact that when the

(Continued on page 136)*



Ask the **FA** Man

ARE you getting the full value of the **FA** Sales Engineering Service on the buildings you are doing? The everyday, practical help of specialized knowledge and experience that an **FA** man can and will cheerfully give you will help you when figuring panelboard and switchboard installation.

It is our business to assist in every way possible to make electrical jobs better. Our district office men are posted on up-to-date wiring practice—they know all the improvements in installation and

can recommend suitable panelboards and switchboards for greatest service and economy.

Knowledge of the electrical industry generally, of the electrical contracting business, and of the panelboard and switchboard business, we consider absolutely essential in successful servicing of architects, engineers and electrical contractors. We have men trained to this service and facilities in all parts of the country to provide both the right product and all the features of co-operation to go with it.

Frank Adam

ELECTRIC COMPANY

ST. LOUIS

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Omaha, Nebr.
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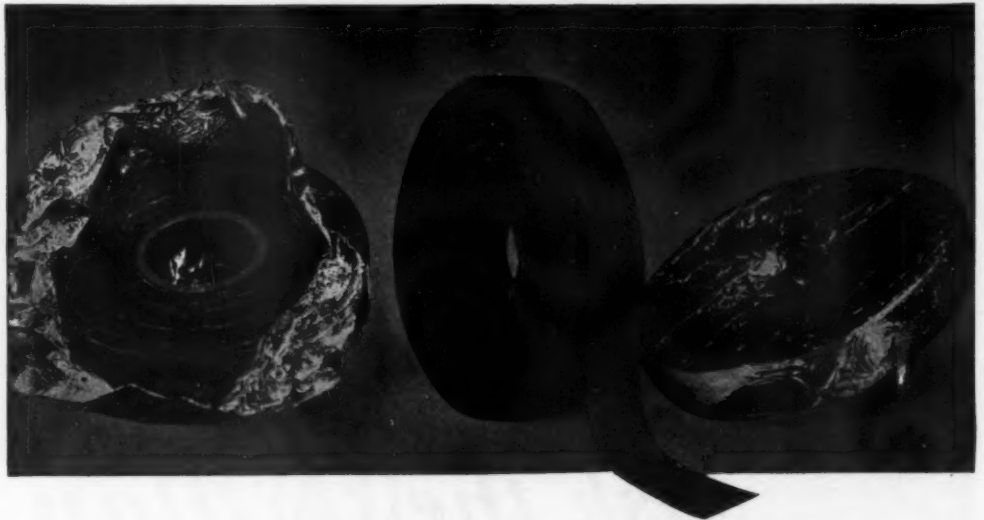
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Send for our catalog. Telephone for your nearest **FA** Man and use him for co-operation. The obligation to serve you we consider ours.

PANELBOARDS ARE THE SIGN OF A BETTER JOB

Nos. 360 and 361
in 1-2-4- or 8-oz.
rolls. No. 371—
extra quality—in
8-oz. rolls only.



G-E FRICTION TAPES

Guard *YOUR* reputation too!

If you're proud of your work, you watch the *little* things. You tape wire joints to hold . . . to insulate securely.

With G-E Friction Tapes you can be sure. You know they will not dry out in a few months and loosen.

These tapes have a reputation to uphold—the General Electric reputation for reliable materials and workmanship.

That's one reason big contractors and central stations everywhere use them in preference to ordinary tapes. There's no difference in price.

G-E Merchandise Distributors everywhere can supply you, or write Section M-293, Merchandise Dept., General Electric Co., Bridgeport, Conn.

G-E INSULATING MATERIALS

for every purpose

Varnishes, Oils, Shellacs, Paints
Filling and Sealing Compounds
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Insulating Papers
Core Solder and Fluxes
Cords and Twines
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• GENERAL ELECTRIC COMPANY

• BRIDGEPORT, CONN.

GENERAL  ELECTRIC 
INSULATING MATERIALS



Armies of silent salesmen help you sell the G-E WIRING SYSTEM

People everywhere know the General Electric Wiring System—in communities large and small...in your city.

Vast armies of advertisements marching every month through national magazines for years have sold the G-E Wiring System to the nation. They are salesmen for you...appealing to home owners, architects, builders, developers.

They firmly implant the idea that a G-E Wiring System assures lasting satisfaction...that its long-run cost is least because maintenance is low...that "General Electric" sealed into a building great or small adds property value.

You can capitalize on this good-will. Write to Section G-293, Merchandise Dept., General Electric Company, Bridgeport, Conn., for the idea booklet, "Selling House Wiring."

GENERAL  ELECTRIC
WIRING SYSTEM

• MERCHANDISE DEPARTMENT

• GENERAL ELECTRIC COMPANY

• BRIDGEPORT, CONNECTICUT

Contracting News

Information of Interest to Electrical Contractors consisting of items of news, short articles, practical ideas, etc. Our readers are invited to contribute to this department.

To Draft Standard Radio Interference Ordinance

A committee on radio interference comprised of Robert J. Gaskill, chairman, Fort Wayne, Ind., Tobe Deutschmann, Canton, Mass., L. C. Lytz, Mobile, Ala., and J. J. Davis, New Orleans, La., has been appointed by the International Association of Municipal Electricians. The purpose of this committee is to draft up an ordinance on radio interference which will be standard and adopted by all the cities in the country. Many cities have adopted a similar ordinance which has proved very satisfactory.

Due to the fact that public address systems are becoming popular with the municipalities throughout the country, President George Allen has requested information from members who are handling public address systems in order to appoint a committee to report on this work.

* * *

Columbus Contractors to Push Reinspection

The Columbus Electrical Contractors Association at its meeting on February 18 voted to become a chapter of the Electragists and to have reinspection as one of its major programs. Applications have been received from approximately thirty contractors.

The speaker of the evening was S. B. Williams, editor of *ELECTRICAL CONTRACTING*, who spoke on the opportunity in the contracting business and how an association can help its members make the most of these opportunities.

Following the speaker, E. E. Evans, M. C. Brooke and A. Weinfield were elected committeemen.

It was voted to hold a dinner dance soon and Ray Foster, Paul Gilmour and E. E. Evans were ap-

pointed a committee on arrangements.

The subject of reinspection received considerable attention from the speaker and from the floor and a committee composed of Paul Gilmour, Abe Weinfield and Jerry Gemeinhardt were authorized to present the matter to the head of the city building department.

* * *

Toronto Contractor Associations Consolidate

The Toronto Electrical Contractors, Builders Exchange Section, has just been formed combining the Toronto Section of the Ontario Electrical Contractors Association and the Electrical section of the Builders Exchange.

This new organization will be located at 1104 Bay St., Toronto, and George Gander has been appointed secretary.

A dinner dance was held on February 19. This dance is the big social event each year in the con-

tractor association work in Toronto and attracts a large attendance from all groups of the electrical industry.

* * *

New York Motor Specialists Elect Officers

At its annual meeting held January 23, the Metropolitan Electrical Trades Association, Inc., affiliated with the A.E.I. as the New York Motor Specialists Chapter, elected the following officers and directors to serve for 1930:

President, Wm. J. Wheeler, New York City; vice president, Louis Kalischer, Brooklyn; secretary pro-tem, Robert W. Barnes, New York City; treasurer, John F. Bonney, Brooklyn.

Directors

George W. Neil, N. Y. Electrical Installation Co., New York City; John F. Bonney, Thompson-Bonney Co., Brooklyn; Louis Kalischer, Louis Kalischer, Inc., Brooklyn; Wm. J. Wheeler, The Maintenance Co., Inc., New York City; Leonard H. Harding, Tollner Electric Co., Brooklyn; Nathan Ruby, Peerless Engineering Co., New York City; Stephen J. O'Brien, S. J. O'Brien, Inc., New York City.

Luncheon meetings of the chapter are held in New York City regularly on the third Thursday of each month. Plans for the year's activities include intensive local promotion by its members of replacement business, in line with the re-motorization program being developed by the A.E.I. Motor Section.

* * *

Freeman Resigns as S. E. D. Head

W. W. Freeman resigned as president of the Society for Electrical Development at a meeting of the board of directors held in New York on February 12, and Charles L. Edgar, president of the Edison Illuminating Co. of Boston and chairman of the Society's Executive Committee, was elected acting president. Mr. Freeman asked to be



WON PRIZE FOR MOTOR DISPLAY BACK IN 1888:—W. M. Clower, Dallas, Tex., contractor has been in the business since its infancy. He is on the right in this picture, with his son, who is partner in the firm. The diploma in the center was awarded Mr. Clower at the Texas State Fair, in 1888, for the best display of electrical motors.

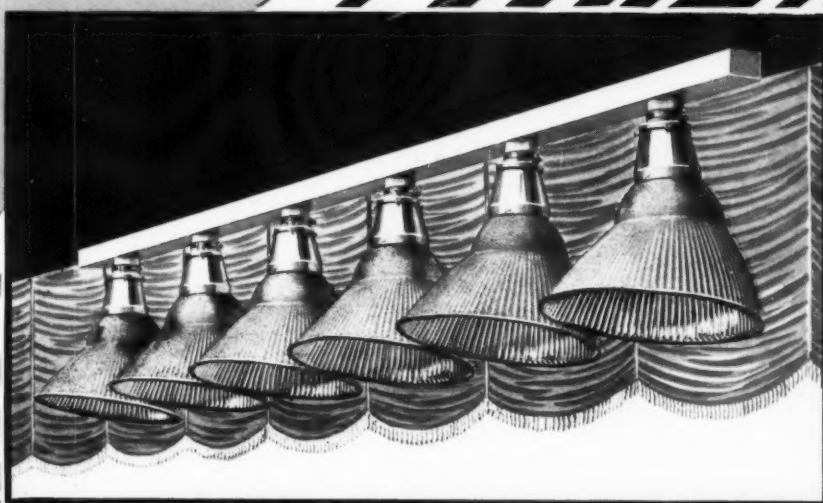
The New WONDER-LITE of Today

FOR SHOW WINDOWS

a MARVEL-LITE PRODUCT

**WRITE
FOR OUR NEW
CATALOGUE
AND
DISCOUNT SHEET**

Our discount is much more liberal. More profit for you, more satisfaction for your customer. Does that sound good?



STANDARD TYPE

Contractors and Jobbers

These New Reflectors will be ready for distribution within the next ten days.

ORDER YOUR SAMPLE

REFLECTOR AT ONCE

**Our Twenty Year Unconditional Guarantee
Applies to These New Reflectors**

After a long period of research and experimenting, we have succeeded in perfecting this new line of Show Window Reflectors. *Scientifically correct in design to give maximum lighting efficiency all-metal non-breakable.* Never before has such a radical improvement in show window reflectors been accomplished.

These new reflectors will revolutionize the art of show window lighting.

SCHEDULE		
Reflector	Lamp	Material
2200C	200W	Chrome Pl. on Brass
2200R	200W	Polished Rayalium
2200E	200W	Etched Rayalium
2150C	150W	Chrome Pl. on Brass
2150R	150W	Polished Rayalium
2150E	150W	Etched Rayalium

Flush Mounting Ring
to fit any of these new
reflectors.

The Marbelite Art Products Co.

2652 West Lake Street Chicago, Illinois

Introducing the new **ILG AIR** Transom VENTILATOR

... Now comes Ilg's latest development in kitchen ventilation—an electric Ilgair that can be quickly and economically installed in any standard size transom without making any alterations in transom opening.

... Automatic in operation—the Ilgair Electric Transom Ventilator handles 750 cu. ft. of air per minute

... the only electric ventilator made with a *fully enclosed, self-cooled motor*. Made, tested, sold and guaranteed as a complete unit.

... Recommend and specify an Ilgair in your wiring estimates. Mail coupon for trade discounts and new Illustrated Bulletin.

ILG ELECTRIC VENTILATING CO.
2879 North Crawford Avenue Chicago, Illinois

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U. S. Pat. Off.

ILG *Ventilation*
TRADE MARK
HIGH EFFICIENCY
VENTILATING MACHINE

✓
Automatically
operated

✓
Fits any
standard
size
transom

✓
Easily
and
quickly
installed

✓
Only 8
Screws
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NEW BOOK

— of special interest
to architects, contractors,
builders.

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Without obligation send me the New Illustrated Ilgair book.

Name _____

Full Address _____

Jobber's Name _____

relieved of this office because his new work as chairman of the board of the Intercontinents Power Company places his direct business interests entirely outside of this country.

The presidents of the national associations and chairman of the League Council were elected vice presidents in the following order: L. E. Mayer, R. Bourke Corcoran, C. L. Collens, G. E. Cullinan and M. S. Sloan.

The budget recommendations for 1930 were approved in the amount of \$235,000. Authority was also given to raise a special fund of \$15,000 for augmented effort in promoting adequate wiring through the Red Seal Plan.

Red Seal results in 1929 totalled 60 percent of the total for all four preceding years. The companion activity in the commercial and industrial field—Franklin-Red Seal—is under way and giving evidence of effectiveness.

The board acted favorably on the request of the California Electrical Bureau to extend the scope of its Red Seal license to include Red Seal certification of adequate wiring installations in commercial buildings.

* * *

Central Minnesota Contractors Form Association

The Central Minnesota Electrical Contractors Association was formed by a group of twenty-five electrical contractors in the central Minnesota territory at a meeting held at the Breen Hotel, St. Cloud, Minn., on February 13. At this meeting the following officers were elected: John Ellenbecker, St. Cloud, president; Ed. Karst, Fergus Falls, vice president and Frank Axel, treasurer. The board of directors elected were Asher Taylor, Brainerd; Otto Bringe, Melrose; Wm. S. Larson, Brainerd; C. E. Norton, Fergus Falls and S. J. Limperich, Glenwood. The board of directors were instructed to draw up a constitution and by-laws.

Among the speakers were E. L. Harris, secretary of the Electrical Contractors Association of Minneapolis and Frank Langford, central executive committeeman of the Association of Electragists. Mr. Harris gave a brief talk entitled "Value of an Association" and outlined a plan

whereby several chapters will be organized in Minnesota and consolidated into a strong state organization. Mr. Langford spoke on the subject of "The Electragist's Association and its Value to the Electrical Contractor."

* * *

Plan to Double Membership in 1930

In order to double the membership of the Electric Club of Brooklyn, a meeting was held on January 27 at which time a membership drive was planned. One new member for each present member will be the goal of the club. At the present time almost half of the members are electragists.

The present officers are John A. Walker, president; D. M. Carr, vice president, and John Wilhelm, secretary and treasurer.

The club has also appointed a committee to investigate and report on the new service rules book just published by the New York Edison System.

Minneapolis Contractors to Discuss Credit Control

At an executive committee meeting held January 10, President Hurd of the Electrical Contractors Association of Minneapolis appointed a jobbers relation committee consisting of C. C. Courture, chairman, A. O. Giere, Al Strohmeier and Earl Williams. This committee expects to meet with the jobbers in the near future to discuss credit control and several other matters that are of vital interest to the members.

* * *

Brueckmann Heads Baltimore League

At the annual meeting of the Electric League of Baltimore on January 22 the following officers were elected: A. C. Brueckmann, president; Frederick Clagett, vice president; W. D. Young, secretary; John S. Dobler, treasurer, and G. R. Tabb, manager.

The new offices of the League are at 410 and 411 Continental Building.



RECEIVES TROPHY FOR WIRING MOST RED SEAL HOMES:— Frank R. Hannon of the Keystone Electric Co., Walnut Park, Calif., wired the largest number of Red Seal homes in 1929 in a contest conducted by the Southeast Electric Club, Huntington Park, Calif., and sponsored by the Associated Wholesale Electric Co. Mr. Hannon wired twenty-four homes. William F. Brainerd of the Associated company is shown presenting the silver cup to Mr. Hannon in the presence of the members of the club. Next to Mr. Brainerd is Louis J. Meller of the Meller Electric Co., Lynwood, Calif., president of the club, and Alton R. Prior, chief of the electrical department of the city of Huntington Park, Calif., secretary-treasurer. During 1929 sixty-five Red Seal homes were built in this district as compared with eight in 1928, and so much interest was shown in this contest that the Associated Wholesale Electric Co. has announced a similar trophy for the 1930 contest. Competition was very keen as Mr. Hannon's company was closely followed by South Gate Electric Co., which wired twenty-two Red Seal homes.



**Now! a
30 Ampere
and
60 Ampere**

**Class A
Weatherproof
Meter Cabinet
without interlock**

**For Outdoor and
Indoor Use.**

**Listed as standard
by
Underwriters'
Laboratories**



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No. A-54**

**The
M. J. Lewis Products
Co.**

**508 WEST GIRARD AVENUE
Philadelphia, Pa.**



MOTOR SPECIALIST DOUBLES SHOP SPACE:—W. M. Smith, Dallas, Tex., is standing on the left of his men, in front of the store which he has added to the other place next door. Mr. Smith has specialized almost from the first in motor repairs, winding, etc., including a very large fan business. The business is seven years old.

1930 Officers for Toledo Contractors

The following officers for the Toledo Electrical Contractors Association, Inc., Toledo, Ohio, were elected for 1930: A. E. DeFrance, president; Ed. DeLisle, vice president; George Saunders, secretary, and Paul H. Thatcher, treasurer. The board of trustees is composed of the officers and George Lehman, H. C. Scannell and Walter Eggleston.

* * *

New Enclosed Switch Test Requirements

Under the new test specifications of Underwriters' Laboratories enclosed switches are now required to be tested on circuits for which they are designed—i. e., d.c. or a.c.

With the increased use of these switches on a.c. circuits, principally between 230 and 600 volts, it was found that switches tested on 250 volts d.c. under the old outline would not perform acceptably on a.c. circuits of over 250 volts and less than 600 volts, which was the next division.

The standard overload test of 50 percent excess current at rated voltage is still applied. On d.c. circuits, a straight resistance load is used while on a.c. circuits a reactance load of 75-80 percent power factor is used.

All switches which formerly had a complimentary 500 a.c. voltage

rating have been recalled and tested for use on 460 or 575 volt circuits, whichever the manufacturer desired. This retesting has in many instances resulted in major changes in switch design.

Switches which comply with the 75-80 percent power factor test are considered suitable for general use, but not for controlling motors. Motor control switches are subject to a great deal more severe tests at considerably lower power factors and four times the current rating of the horse power rating of the switch on d.c. circuits and six times the current rating of a.c. horsepower circuits.

The Laboratories also report that they have abandoned the classification of switches. Instead of listing classifications AA, A and B switches, all of these designs are now listed under the one heading of "Enclosed Switches."

* * *

To Promote Better Wiring in Albany

A definite program has been worked out to promote wiring, in connection with other activities, for 1930 by the Albany chapter of the Hudson-Mohawk Electric League. The program is as follows:

Police License Ordinance relating to licensed electricians:

1. Checking up on all building activities—particularly those jobs embracing alterations and additions where the service is already in.
2. Working through the underwriters

Waiting for You to sell them a



Buffalo Breezo

AIR is free, but most of it is bad. Good air is worth money, and you, Mr. Contractor, can sell it to your town, and make a good, legitimate profit.

Scores, if not hundreds of business places in your community are badly in need of ventilating equipment. Can you supply it?

Yes, you can. But read on. . . .

Take garages, as one horrible example. Every commercial garage should have one or more ventilating fans. Has it? No. But read on. . . .

Battery charging stations, tire repair shops, laundries,—you have these in your neighborhood. Do they have ventilating fans? Well, four out of five have not. Restaurants, cleaning establishments, bakeries, theaters, are places where "halitosis" prevails, unless you, or some other fan merchant has been around to sell an installation.

Careful checks we have made in a number of average cities show these statements to be only too true.

Well, Mr. Contractor, what are you going to do about it? Buffalo Breezo units are made in sizes to fit every one of the conditions mentioned, to say nothing of the newly developed Home Ventilating Unit that has a proper place in every residence or apartment kitchen. There's a profit for the contractor who sells one of these units, as well as a profit in the installation.

If you are like the average contractor, you are not passing up any opportunities for extra profits. Putting Buffalo Breezo ventilating fans in new buildings as well as in old ones, residences and business places, will be a big step toward a bigger income tax for you next year. We know that you can get a large share of this business. We want to help you to do so. We will gladly send you a handbook on ventilation which contains an easy method for estimating the size of Buffalo Breezo required for any given location.

The public is "Fresh Air Minded," and will listen to your story on Buffalo Breezo. Send for the booklet and try it.

BUFFALO FORGE COMPANY

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Kitchener, Ont.

BUFFALO



BREEZO

BENJAMIN-STARRETT

Heavy Duty Lighting Panelboards and Steel Cabinets

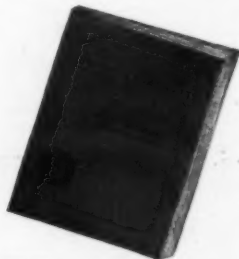


Safety Front Type Heavy Duty
Benjamin-Starrett Panelboard

The wide variety of circuit arrangements makes it easy to select just the right panel to meet any residence, commercial, institutional or industrial wiring requirement.

Many exclusive Benjamin-Starrett features cut installation time to the minimum, assuring the contractor a sure profit on his panelboard jobs.

The unit sectional construction and individualizing of parts provide the greatest accessibility and flexibility, assuring the highest type of continuous service at a minimum of maintenance expense.



FREE—This 80-page catalog of complete listings and illustrations. Send for it today.

Benjamin Electric Mfg. Co.

General Offices and Factory

DES PLAINES, ILL. (Chicago Suburb)

New York

Chicago

San Francisco

Special Features

Easy to Install

4-inch wiring space on all four sides; adjustable trim clamps; extra large panel mounting holes; slip-off barrier easily removed; one-piece panel back.

Quick Delivery

Boxes carried in stock at local distributors and district warehouses. Unit section construction insures quick assembly of panelboard.

All Parts Removable from Front

Should replacement of parts ever become necessary, the switches and fuse receptacles are individual units which may be removed without disturbing the trim. Replacements or changes in branch circuits made without removing panel from box.

Heavy Duty Switches

Branch circuit tumbler switches on both two-fuse and one-fuse panels are heavy duty type—30 ampere, 250 volts.

Three Styles of Cabinets

Safety Front, Protective Front and Open Front to suit any specific requirement.

in the field to determine whether the job specified under the permit is actually done by the contractor who obtained the permit.

3. Furnishing the electrical department of the Board of Underwriters with a daily report of the electrical permits issued by the building department.

Contact on Architects:

1. Calling on architects to obtain information as to the erection of new buildings, dwellings, alterations, additions, etc., and relaying this information in a follow-up way to members of the chapter by a method to be determined by the contact committee.

2. Following up stories in the newspapers pertaining to building activities embracing new concerns planning to locate in Albany.

3. Calling on the building committees of institutions to which is entrusted the problems of erecting new schools, hospitals, banks, etc.

4. Enlisting the dual support of the owner and the architect to keep the electrical contract separate and distinct from the general contract, resulting in a saving of at least ten percent to the owner.

Rewiring and Reinspection:

1. Calling the attention of the owner to existing conditions in which the wiring is inadequate, faulty and hazardous and which, if not remedied, will mean an increased insurance cost.

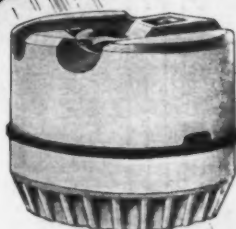
2. Working this plan through the underwriters who will in turn advise the owner that existing conditions are such that if the prevailing hazards are not removed, the insurance rate will be increased, and in some cases, may be cancelled.

3. Advising members of the chapter that are directly interested in this class of work, the name of the owner, his address, the location of the job and the findings of the underwriters that warrant the change.



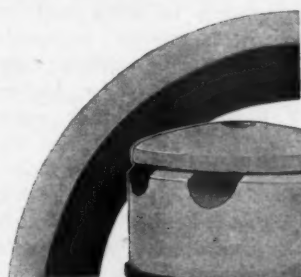
TWENTY-TWO YEARS IN THE BUSINESS:—I. B. Jacob, head of Jacob Electric Co., Houston, Tex., started wiring in August, 1907. While he conducts a general wiring business, he goes in strongly for lighting—so much so that he uses as his slogan: "Jacob—The Heavy Light Man". He is another old timer who has a lot of interesting relics in the shape of early electrical devices.

ARROW

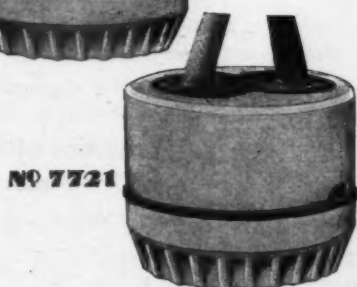


No 7718

PORCELAIN RECEPTACLES



No 7720



No 7721



No 7722



For fixture assemblies and what-

have-you for a LOW-priced

Receptacle . . . No. 7718 has

screw terminals for through wiring.

No. 7720, concealed terminals

for through wiring. No. 7721 has

9" wire leads, of No. 14 stranded

rubber-covered wire. No. 7722,

9" wire leads of No. 18 stranded

rubber-covered wire. Prices,

Competitive. Quality, ARROW.

Write for samples—mentioning

Catalogue numbers desired.

ARROW ELECTRIC DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC CO.

HARTFORD, CONN.

WADSWORTH

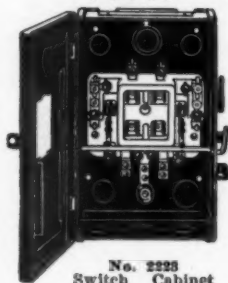
SWITCHES

FOR EVERY INSTALLATION

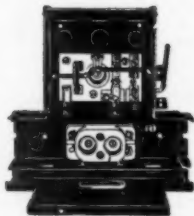
Your customers demand quality at a reasonable price, and you can depend on Wadsworth to meet this demand every time. That's the Wadsworth policy. . . . Constant high quality at a reasonable price. And once you've installed a Wadsworth Switch, your own practical experience will prove to you that with Wadsworth Switches you eliminate disagreeable work and worry—and get things done.

"There is a Wadsworth Switch for every installation." Bulletins No. 21 and No. 41 describing illustrations mailed on request.

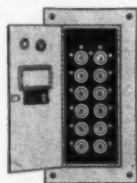
The WADSWORTH ELECTRIC MFG. CO. INC.
Covington, Kentucky



No. 2225
Switch Cabinet
open, switch
closed, switch
blades are in
clear sight.



No. 362
Sealed Main Fuse
Type with 2
Branch Circuits
in same cabinet.



No. 12 F
Aluminized Trim
in Place.



HEADS FORT WORTH ELECTRA-GISTS:—O. L. Goolsby is president of the Electragist Chapter in Ft. Worth, Tex. Being an old hand at the business, he is able to laugh at difficulties and is decidedly optimistic as to the future of electrical contracting in his state.

Found Low Grade Work Did Not Pay

In light of the demand by certain interests for cheaper wiring products to be used in residential rewiring, it is interesting to learn that in Sweden where inferior materials had to be used during wartime, they are now rewiring on a higher standard because low grade work did not pay. The authority for this statement was Sir John Brooke, Commissioner of Electricity, who, in an address before the British Electrical Contractors Association's annual dinner, stated that the people of Great Britain are beginning to realize the need for adequate installations and adequate materials.

* * *

Activities of Springfield Association

A committee has been appointed by the Electrical Contractors of Springfield, Mass., to meet the Boston legislature during the early part of this year to try to pass a new bill defining journeyman and master electrician. Unions and other contracting associations throughout the state are also making an effort to have this bill, which is known as No. 22, passed.

The association is working on an electric lamp campaign in conjunction with the local utility company. The city has been divided into sec-



BUYING FROM ONE SOURCE MEANS

Economical purchasing

You save time and you save money when you buy all your electrical requirements from the General Electric Supply Corporation.

You save time in having only one purchase order form to write—only one bill of materials to check—only one account to post—and only one check to draw in payment.

You save money too, for this simplification in office procedure allows you to operate with less clerical expense—enables all departments to do more efficient work—prevents the likelihood of costly errors.

In addition to these savings in time, handling and overhead, you enjoy the assurance that standard, well-advertised General Electric products are absolutely reliable and that

complete stocks are within a few hours—or minutes—of your store.

**WHEN YOU HAVE AN ELECTRICAL NEED
—WRITE!**

Join us in the General Electric Hour, broadcast every Saturday at 9 p.m., Eastern Standard Time, over a nation-wide N. B. C. network.



—to serve better the electrical needs of America

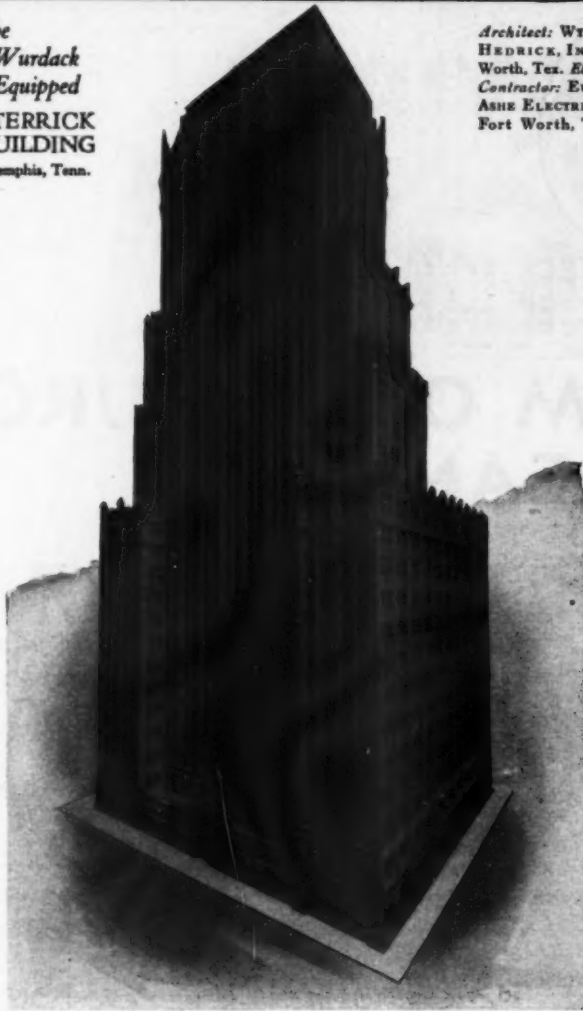
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SUPPLY CORPORATION

GENERAL OFFICES

BRIDGEPORT, CONNECTICUT

The
**Wurdack
Equipped
STERRICK
BUILDING**
Memphis, Tenn.

*Architect: WYATT C.
HEDRICK, INC., Ft.
Worth, Tex. Electrical
Contractor: EUGENE
ASHB ELECTRIC CO.,
Fort Worth, Texas.*



**This New High Point on the Memphis Skyline
is a New High Point in
WURDACK ACHIEVEMENT**

Constantly seeking to improve our product; constantly trying to build more efficient, more dependable, better engineered switchboards and panelboards, Wurdack developments keep pace with the growing demands of modern construction. We count it an honor that the architect and builder of the monumental Sterrick Building in Memphis selected Wurdack equipment for this outstanding structure.

WM WURDACK
ELECTRIC MFG. CO.

4444 CLAYTON AVE., ST. LOUIS, MO.

See Sweet's catalogue for nearest branch office.

tions and each contractor is given a certain section in the city which is his own territory.

An electric range campaign will also be carried on this year by the association.

The officers elected for 1930 were A. F. Paige, president, W. H. Grogan of Forest Park Electric Co., vice president, M. L. Schmidt, treasurer and Harry Heyman, secretary. The board of directors are A. F. Paige, W. H. Grogan, Wm. Crowley, T. Tuohey and J. Collins.

* * *

**Corcoran Leaves Chicago
League**

R. Bourke Corcoran has resigned as managing director of the Electric Association of Chicago to become associated with the J. Walter Thompson Advertising Agency of New York. It was the Thompson agency which made the market survey for the industry sales conference two years ago.



R. Bourke Corcoran

Mr. Corcoran has directed the work of the Electric Association since its start in November, 1925. During the four and one-half years it has been in operation this association has engaged in many very important activities. It initiated the Franklin Red Seal specifications for commercial and industrial lighting which are now being sponsored by the Society for Electrical Development. It has created an architects'

(Continued on page 47)

GENERAL ELECTRIC *announces* CODE WIRES *in*



Now you can have rubber covered wires of G-E quality in COLORS...to make circuit marking easy.

Red, Green, Blue, Brown, Black, Yellow, White and White-with-a-tracer—G-E offers you distinctive wires that make new wiring easier... that save time and reduce testing on extensions and alteration jobs.

The same high-grade copper conductor G-E Code Wires have always had... the same uniform centering of wire in its rubber jacket... the same tough braid... the same smooth, clean finish to insure easy pulling—and COLORS... at no additional cost! Send for a tube of eight samples.

Every roll of G-E Code Wire is tested... every foot exceeds code requirements. It's the kind you would use on your own building.

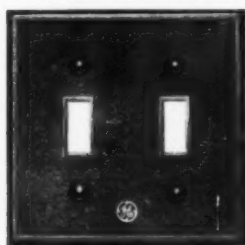
You can get quick deliveries from G-E Merchandise Distributors everywhere.

GENERAL  ELECTRIC 
CODE WIRES

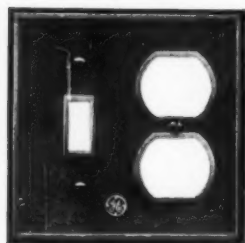
MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT



**A FEW PLATES OF
THE TEXTOLITE LINE**



For Two Flush Tumbler Switches



*For Switch and Double
Convenience Outlet*



For Switch and Bull's-Eye

TEXTOLITE

FLUSH PLATES **ADD** **BEAUTY** and **RUGGEDNESS** **TO WIRING**

In homes or business buildings, flush plates of TEXTOLITE add new beauty and ruggedness to the finish you put on each wiring job.

Textolite . . . in rich tones of brown and black with stippled surfaces . . . conforms with any decorative scheme. Its finish is *permanent*—never discolors or tarnishes.

It serves the contractor well—is not easily marred by tools that slip . . . elastic enough to screw down snugly and *hold*.

Textolite is a phenolic compound that's tough, light, hard, unaffected by time or climate, and it's good insulation.

General Electric offers a complete line of Textolite moulded wiring devices . . . flush tumbler switches, convenience outlets, wall plates. Write for descriptive matter to Section D-293, Merchandise Department, General Electric Company, Bridgeport, Conn.

GENERAL ELECTRIC

TEXTOLITE WIRING DEVICES

Elements of the G-E Wiring System

MERCHANDISE DEPARTMENT • GENERAL ELECTRIC COMPANY • BRIDGEPORT, CONNECTICUT

Corcoran Leaves Chicago

(Continued from Page 44)

service bureau which has recently published standard house wiring specifications and has in preparation standard specifications for large building wiring. Its work, in conjunction with the power companies and the contractor's association, has resulted in a very marked increase in rewiring work and in an increase of 50 percent in residential wiring. One of its unusual activities was interesting the members of the local union in better wiring practice through a booklet on standards of residential wiring.

One of the outstanding events of the industry each year is the annual dinner sponsored by the Electric Association in which the leading executives from railroads and other important industries pay their respects to the electrical industry.

The latest activity of the association is the creation of a lighting institute which will be open to the public around the middle of March.

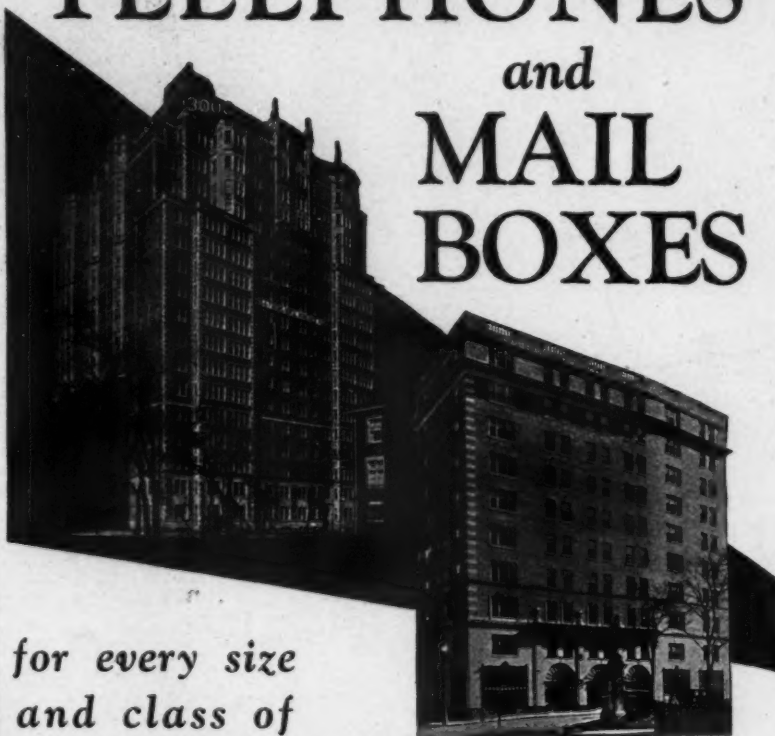
Mr. Corcoran, for the past two years, has been chairman of the League Council and as such has been a member of the board of directors of the Society for Electrical Development.



SELLS OUTLETS AND COVERS THEM UP:—Bill Moody, mechanic of Gay Electric Co., Dallas, Tex., is not only a first class electrician, but a real salesman as well. He goes on each job with the idea of selling something more. He even sells outlets for use in the future, which are covered up for the time being, knowing that they should go in. The customers are always pleased because Bill shoots square and can prove the need of every extra thing he sells.



TELEPHONES and MAIL BOXES



for every size
and class of

APARTMENT HOUSE

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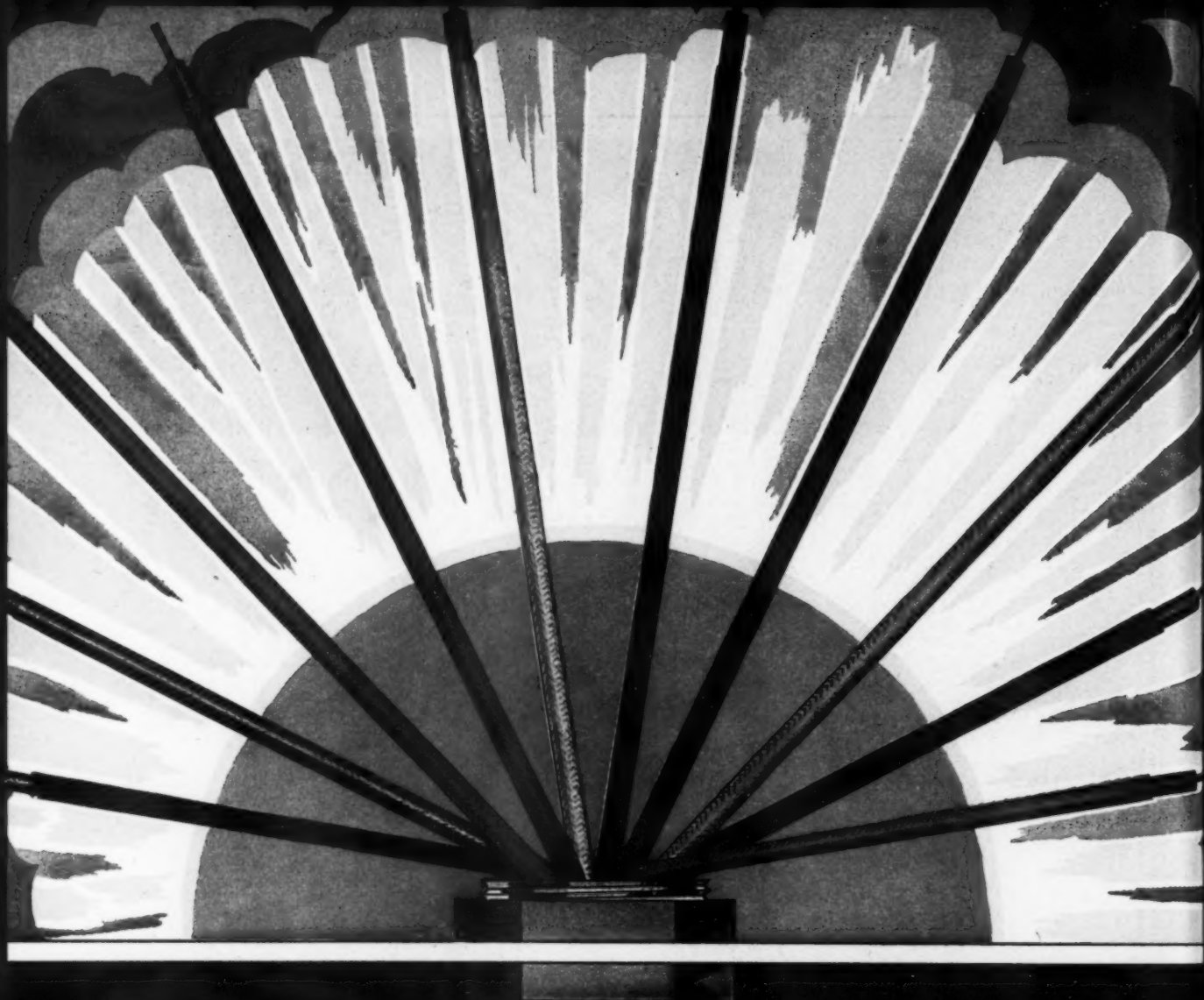
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**MANUFACTURERS OF DROP AND LAMP TYPE ANNUNCIATORS,
PRIVATE TELEPHONE SYSTEMS, AND PUSH BUTTONS**



"Sunset Brand" **SELF-IDENTIFIED**

COLORED WIRE

A great aid to faster, more accurate and more profitable work. Eliminates testing and circuit tagging. You get the right hook-up the first time—and every time. . . . Approved by National Board of Fire Underwriters. . . . Made in distinctive and easily identified colors. . . . A satin-smooth finish assures easy pulling. . . . COLLYER "Sunset Brand" Colored Wire is ready for you at your jobbers. . . . Samples will be sent to contractors upon request to the factory. Write for your samples today.

Mail this Coupon Today!

FREE SAMPLES

COLLYER INSULATED WIRE CO.,
PAWTUCKET, R. I.

Gentlemen: Please send me without obligation on my part, free samples of COLLYER Sunset Brand "SELF-IDENTIFIED" Colored Wire.

Name

Address

City State

COLLYER INSULATED WIRE CO., PAWTUCKET, R.

Suggested RESALE PRICES *for* Wiring Supplies

The prices listed on the following pages are merely suggested resale prices for the commonly used standard supplies and equipment employed in electrical construction work. They are based on average current trade costs throughout the country, very largely obtained from jobbers' price sheets, and are also based on average overhead charges.

• • •

Obviously, prices can be suggested only for the widely used products that are nationally distributed, and under no circumstances is this section intended to function as a directory of products or manufacturers.

• • •

The publishers wish to again emphasize that these are merely *suggested* resale prices and while every effort is made to make them universally applicable and accurate we cannot guarantee them or assume any responsibility for errors.

• • •

The prices appearing in this section will be completely revised each month as trade prices may change.

Copyrighted, 1930

by the

Electrical Trade Publishing Co.

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A-SUNDRIES

ASBESTOS
Asbestos Millboard—Per Pound—30c.

House Type

Number Drops	Ansonia	Edwards Dixie	Edw. & Faraday	"P & W"	"P & W"
		No. 81 or Faraday	White Enamel		
2	.....	\$ 9.85	\$13.00	.....	.....
3	\$ 9.90	11.60	14.80	.....	.....
4	10.75	13.05	16.40	\$13.25	\$16.50
6	14.50	16.40	19.40	16.50	20.00
8	16.50	19.40	22.75	19.80	24.75
10	19.00	22.75	26.00	23.00	29.70
12	22.25	25.90	29.15	26.40	.....
14	24.75	.....	40.00	.....	.....
16	27.25	34.60	40.00	34.65	.....
Ex. Drops	.....	2.25	2.00	.....	.....

(All Other Announcers—Sell at List less 10%)

Style D Face Type Wood Face			Style F Flush Wood Face		Style F Flush Metal Face	
Number of Drops	Number	Price	Number	Price	Number	Price
4	DA 4	\$21.50	FA 4	\$44.80	FA 4	\$49.80
6	DA 6	26.50	FA 6	49.30	FA 6	55.00
8	DA 8	31.50	FA 8	53.80	FA 8	59.70
10	DA 10	36.50	FA 10	58.25	FA 10	64.70
12	DA 12	43.10	FA 12	64.25	FA 12	71.80
16	DA 16	50.50	FA 15	73.10	FA 15	81.50
20	DA 20	69.75	FA 20	88.15	FA 20	98.00

Add for each drop on any of above—\$4.15 per drop

	Arrow	Ben. Bryant	G. E.	Huubl.	Price
Mogul to Medium.....	292	98	421	070	\$0.50
Medium to Candelabra.....	392	392	33699		.25
Candelabra to Miniature.....	391	391			.20
Medium to Intermediate.....	492	9691	2644	462	.25
Parallel Blades to Medium.....		1006	K F	682	5424
Plug in Pull Socket.....	3504	3502		35024	.20
Benjamin Vase Adapter.....	No. 831, 832, 833—Each.				2.00

For Clusters to go with Vase Adapter See PL-9.

Benjamin No. 91 Socket Extension—Ea.....	\$.45
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For 8" to 14"	Reflectors No. 5828-5829-5957-5958.....	\$.55
For 16" to 20"	Reflectors No. 5953-5954-5959-5960.....	.65

	Price
Universal Cord Adjuster Standard No. 1417 3/8" Long.....	\$.10
" " Factory No. 1418 5/8" Long.....	.20
" " Reinforced No. 1419 5/8" Long.....	.22
Ball Type No. 1403 & 5 for Type C Cord. 1/8 hole.....	.10
No. 4634 & 5 for Reinforced Cord. 3/8 hole.....	.10

Luminous Acorns and Pendants for Pull Chain.....	\$0.30
Brass Acorns and Tassels for Pull Chain.....	.10
Brass Acorns Adjustable for Linen Cord.....	.10

STANDARD SWITCH BOXES

With BRACKETS or EXTENDED EARS or LATH SUPPORTS

		Price	
		Black	Galvd.
For Loom.....	2, 2 1/4 or 2 1/2"	\$.22	\$.26
" ".....	2, 2 1/4 " 2 1/2"	.24	.28
For Metallic Cable.....	2, 2 1/4 " 2 1/2"	.30	.35
" Rigid Conduit.....	2 to 2 1/2"	.27	.32

	Boxes		Spacers	
	Black	Galvd.	Black	Galvd.
For Loom or Rigid Conduit 1 7/8" Deep.....	\$.25	\$.28	\$.23	\$.24
For Rigid Conduit 2 1/2" Deep.....	.80	.85	.40	.45

	2 Gang	3 Gang	4 Gang	5 Gang	6 Gang	7 Gang	8 Gang
Price of Box...	\$.80	\$1.20	\$1.65	\$2.10	\$4.00	\$6.35	\$6.50
Price of Cover...	.40	.60	.80	1.00	2.00	3.35	3.70

		Black			Galvanized		
Loom, Cable, Conduit	2 Gang	3 Gang	4 Gang	2 Gang	3 Gang	4 Gang	
Tandem Boxes 1½ & 2" Deep	\$.68	\$1.10	\$1.63	\$.81	\$1.23	\$1.90	
" 2½ & 3" " "	.81	1.23	1.90	.95	1.37	2.18	

		Black	Galvd.
For Rigid or Flexible Conduit without Clamps.....		\$.50	\$.60
" " " " " with Clamps.....		.60	.70

Gem-Appleton or Raco, etc., with Single Receptacle.....	Black \$.85	Galvd. \$.90
“ “ “ “ “ “ Duplex “	1.25	1.35

For Concrete Boxes See Page PL-5.
For Solid Gang Boxes See Page PL-5.

BOXES, ROUND, OCTAGON & SQUARE

ELECTRICAL CONTRACTING

COVERS, ROUND

For 3 1/4" & 4" Octagon & Round Boxes

Universal No.	Size	Description	Price Each	Black	Galvd.
24C-1	3 1/4"	Flat Closed Cover Blank 3 1/4"	\$.06	\$.08	
24C-2	3 1/4"	Raised 3/4" Closed Cover Blank	\$.06	\$.09	
24C-6	"	Flat with 1/4" KO	\$.07	\$.09	
24C-7	"	Raised with 1/4" KO	\$.08	\$.10	
24C-12	"	Raised 3/4" Hole, for Cord or Bush	\$.08	\$.10	
24C-28	"	Spider Flat for Surf. Mntd. Devices	\$.09	\$.11	
24C-31	"	Raised 3/4" Opng. for Sign Recep.	\$.08	\$.10	
24C-35	"	Flat Opng. 3/4" for Spec. Sign Recep.	\$.22	\$.24	
24C-35 & 36	"	Raised Opng. 3/4" for Spec. Sign Recep.	\$.08	\$.10	
54C-1	4"	Flat Closed Cover	\$.08	\$.10	
54C-2	"	Raised 3/4" Closed Center	\$.08	\$.11	
54C-3	"	Raised 3/4" Opening 2 1/4"	\$.11	\$.13	
54C-6	"	Flat with 1/4" KO	\$.08	\$.11	
54C-7	"	Raised 3/4" with 1/4" KO	\$.09	\$.12	
54C-12	"	Raised with Opening for Cord	\$.09	\$.11	
54C-28	"	Flat for Surface Mounted Devices	\$.09	\$.12	
54C-31	"	Raised for Sign Receptacles	\$.09	\$.11	
54C-35 & 36	"	"	\$.09	\$.11	
1173	3 1/4"	Porc. Round Cov. for 3 1/4" Box with hole	\$.20		
1173	4"	Porc. Round Cov. for 4" Box with hole	\$.30		

COVERS, SQUARE

For 4" & 4-11/16" Square Boxes

Universal No.	Size	Description	Price Each	Black	Galvd.
52C-1	4" Sq.	Flat Closed	\$.09	\$.12	
52C-2	"	Raised Closed Center	\$.12	\$.14	
52C-3	"	" with 2 1/4" Opening	\$.15	\$.17	
52C-6	"	Flat with 1/4" KO	\$.12	\$.14	
52C-7	"	Raised with 1/4" KO	\$.17	\$.20	
52C-12	"	" Hole for Cord	\$.14	\$.16	
52C-13	"	Raised 3/4" For Single Flush Devices	\$.12	\$.14	
52C-14	"	" " " " "	\$.13	\$.16	
52C-15	"	" " " " "	\$.18	\$.21	
52C-16	"	" " " " "	\$.21	\$.22	
52C-17 & 18	4"	Raised 3/4" For Two Flush	\$.17	\$.20	
52C-19	"	Raised 3/4" For Two Flush	\$.24	\$.27	
52C-21	"	Raised 1 1/4" For Two Flush	\$.26	\$.28	
52C-28	"	Flat For Surface Mounted	\$.18	\$.20	
52C-35 & 36	4" Sq.	Raised for Sign Receptacles	\$.17	\$.20	
52C-48	"	Raised with 2 1/4" Opening	\$.13	\$.15	
52C-52	"	Raised 3/4" For Single Flush Devices	\$.12	\$.14	
72C-1	4-11/16" Sq.	Flat Closed	\$.30	\$.40	
72C-2	"	Raised 3/4" Opening	\$.36	\$.40	
72C-3	"	Raised 3/4" Opening	\$.40	\$.40	
72C-12	"	Raised with Hole for Cord	\$.40	\$.40	
72C-14	"	Raised 3/4" For Single Flush Devices	\$.40	\$.40	
72C-18	"	Raised 3/4" For Two Flush	\$.53	\$.53	
72C-48	"	Raised 2 1/4" Opening	\$.40	\$.40	

4" SQUARE COVERS

For Exposed Work

Universal No.	Description	Price Each	Black	Galvd.
N-8490 to 8493	4" Cover For One Push or Toggle Switch or one Single or Duplex Receptacle	\$.25	\$.30	
N-8493A to 8500	4" Cover For Two Push or Toggle Switches or Two Receptacles or any combination of two devices	\$.35	\$.40	

EXTENSION RINGS

For Flush Devices

Universal No.	Description	Price Each	Black	Galvd.
25151-57151	3 1/4" Octagon Ring—1 1/4" Deep	\$.26	\$.28	
53151-55151	4" Square or Octagon Ring—1 1/4" Deep	\$.30	\$.32	
55171	4" Octagon Ring—2 1/4" Deep	\$.46	\$.53	

HANDY OR UTILITY BOXES & COVERS

For Use With Rigid Conduit

Description	Universal Numbers	Appleton Numbers	G. E. Jefferson Numbers	Price
Box 3 1/4"x1 1/4"x1 1/4" For Rigid Cond.	58151	4-SS	187	\$.05
Box 4x2 1/4"x1 1/4" For Rigid Cond.	58361	4-CS	5800	\$.25
Box 4x2 1/4"x1 1/4" For Rigid Cond.		4-SSLS		\$.25
Box 4x2 1/4"x2 1/4" For Rigid Cond.	58371	4-SSL	181	\$.25
Box 4x2 1/4"x2 1/4" For Rigid Cond.		4-SSLD	6400	\$.65
Cover Flat Steel Closed	58C1	2540	58R1	180A
Cover Porcelain with Holes		2541-6		180A
Cover for Sgle. Receptacle	58C5	2558	58R5	180X
Cover for Duplex Receptacle	58C7	2510	58R7	180W
Cover for Toggle Switch	58C14	2594	58R14	180T
Cover for Sgle. Push Switch	58R3	2537		180S
Cover for Sign Receptacle	58C33	2557		180U
Cover for Snap Switches	58C26	2556		180U
Cover with 1/4" K. O.	58C6	2501		180E
Cover with 1/4" & 1/2" Nipple		2553		180S
Cover with Bushing for Cord	58C11			180B

CONCRETE BOXES WITH COVERS

Depth	1 1/4"	2"	2 1/4"	3"	3 1/4"	4"	5"	6"
Box & Back Plate with 3/4" Stud	\$0.30	\$0.35	\$0.40	\$0.45	\$0.50	\$0.55	\$0.60	\$0.65
Box & Back Plate less 3/4" Stud	.25	.30	.35	.40	.45	.50	.55	.60
Extra Plate 4 1/2" Round without Fixture Stud								\$.10
Extra Plate 4 1/2" Round with 3/4" Fixture Stud								\$.15
Extra Plate 4 1/2" Round with 1/2" Fixture Stud								\$.20

SOLID GANG BOXES

Covers Extra

Galvd. Only	2	3	4	5	6	7	8
Box Price	\$.80	\$1.20	\$1.65	\$2.10	\$4.00	\$6.35	\$6.50
Cover	.40	.60	.80	1.00	2.00	3.35	3.70

March, 1930

BOXES, OUTLET

ARMORED CABLE BOXES

Box Only

Size	Stud	Clamps	Bush Plates	Price
3 1/4"x3 1/4" Round	Yes	Two	No	\$.25
3 1/4"x1 1/2" Round	Yes	Two	No	\$.30
3 1/4"x1 1/2" Octagon	No	Two	Two	\$.25
3 1/4"x1 1/2" Octagon	Yes	Two	Two	\$.30
3 1/4"x1 1/2" Round	No	Two	No	\$.20
3 1/4"x1 1/2" Round	Yes	Two	Two	\$.25
3 1/4"x1 1/2" Octagon	No	Two	Two	\$.25
3 1/4"x1 1/2" Octagon	Yes	Two	Two	\$.30
4x1 1/2" Octagon	No	Two	Two	\$.30
4x1 1/2" Octagon	Yes	Two	Two	\$.35
G.E. Cable Boxes for Straight Electric or Combination No. 12 & 14				
Hope Cable Boxes for Straight Electric or Combination No. 12 & 14				
Thomas & Betts No. 565-66-67-68 Standard Cable Boxes				
Thomas & Betts No. 553-554 Dead Ground Cable Boxes				
Thomas & Betts No. 100-161 Flush Wall Type Cable Boxes				

BAR HANGERS FOR OUTLET BOXES

Boxes Extra

(With 1/2" Stud add 5c ea.)	Apple-G. E.	Jefferson	Nat. Met.	Steel	Price
Straight Bar 18" Long	SBH 6600	10	2262	6000	\$.25
Straight Bar 24" Long	SBHL 6601	10A		6000A	\$.35
Shallow Offset Bar 19 1/4" Long	BHS 6602	11		6001	\$.30
Shallow Offset Bar 24" Long	BHSL			6001A	\$.35
Deep Offset Bar 19 1/4" Long	BHD 6603	12		6002	\$.30
Deep Offset Bar 24" Long	BHDL			6002A	\$.35
Straight Old Work Bar	BHOW 6604	13	2267	6003	\$.25
Box Cleat Bar	CBH 6605	14	2268	6005	\$.15
Straight Saddle Bar	XBH		2260		\$.20

BAR SETS

Complete with Boxes

Size	Ears	Clamps	Bush	Appleton	Jefferson	Steel	City	Galvd.	Price
3 1/4"x1 1/2" Round	No	None	None	BH-498L	260B	36116B			\$.35
3 1/4"x1 1/2" Round	No	Two	None	BH-498LC	260CB	36116BC			\$.40
3 1/4"x1 1/2" Round	Yes	None	None	BH-521L	261B	36115B			\$.40
3 1/4"x1 1/2" Round	Yes	Two	None	BH-521LC	261CB	36115BC			\$.45
For Cable or Loom									
3 1/4"x1 1/2" Oct.	Yes	Two	None	1288B		24151CB			\$.45
3 1/4"x1 1/2" Oct.	Yes	Two	Two	BHS-513LC	1288XB	24151XSB			\$.45
3 1/4"x1 1/2" Round	No	Two	None	1286B					\$.35
3 1/4"x1 1/2" Round	No	Two	Two	1287XB					\$.40
4x1 1/2" Oct.	Yes	Two	None		1291B				\$.45
4x1 1/2" Oct.	Yes	Two	Two	BHS-551L	1291XB	54151XSB			\$.50
For Conduit									
4x1 1/2" Round	No	None	None	BH-4C	109B	56112B			\$.35
4x1 1/2" Round	Yes	None	None	BH-4CL	109LB	56111B			\$.45

BUSHINGS & LOCKNUTS

BUSHINGS & LOCKNUTS

For Rigid Conduit

Locknuts—Each	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
Bushings—Each	\$.01	\$.01 1/4	\$.02 1/4	\$.03 1/4	\$.05 1/4	\$.08 1/4
Locknuts—Each	\$.02	\$.02 1/4	\$.03 1/4	\$.04 1/4	\$.06 1/4	\$.08 1/4
Bushings—Each	\$.09	\$.11	\$.19	\$.32	\$.40	\$.58
Locknuts—Each	.11	.20	.30	.40	.88	1.40

PORCELAIN CLAMP BUSHINGS

"Federal" or Equivalent

No.	K. O.	Inside Size	Outside Size	Wire Size	Bushing Each	Extra Ring Each
A-1	1/4"	1/4"	1/4"	No. 10	\$.08	\$.04
A-1 1/2	1/2"	1/2"	1/2"	No. 10	\$.10	\$.04
A-2	3/8"	3/8"	3/8"	No. 8	\$.10	\$.04
A-3	1/2"	1/2"	1/2"	No. 8	\$.12	\$.05
A-4	1 1/4"	1 1/4"	1 1/4"	No. 00	\$.16	\$.07
A-5	1 1/4"	1 1/4"	1 1/4"	450 CM	\$.23	\$.10
A-6	2"	2"	2"	1 Mill. CM	\$.46	\$.12
B-1	1/4"	1/4"	1/4"	No. 10	\$.21	\$.04
K-1	1/4"	1/4"	1/4"	No. 10	\$.32	\$.04
K-2	1/2"	1/2"	1/2"	No. 8	\$.37	\$.05

"MULTI" PORCELAIN CLAMP BUSHINGS







No.	Inside Size	Outside Size	For Wires	Price Each Complete
10	1/4"	1/4"	14 B & S	\$.08
12	1/4"	1/4"	14 B & S	\$.12
15	1/4"	1/4"	14 B & S	\$.10
20	1/4"	1/4"	6 B & S	\$.10
30	1/4"	1/4"	2 B & S	\$.12
40	1/4"	1/4"	000	\$.20
50	1 1/4"	1 1/4"	350,000	\$.30
65	1 1/4"	1 1/4"	600,000	\$.38
60	1 1/4"	2 1/4"	1,000,000	\$.45

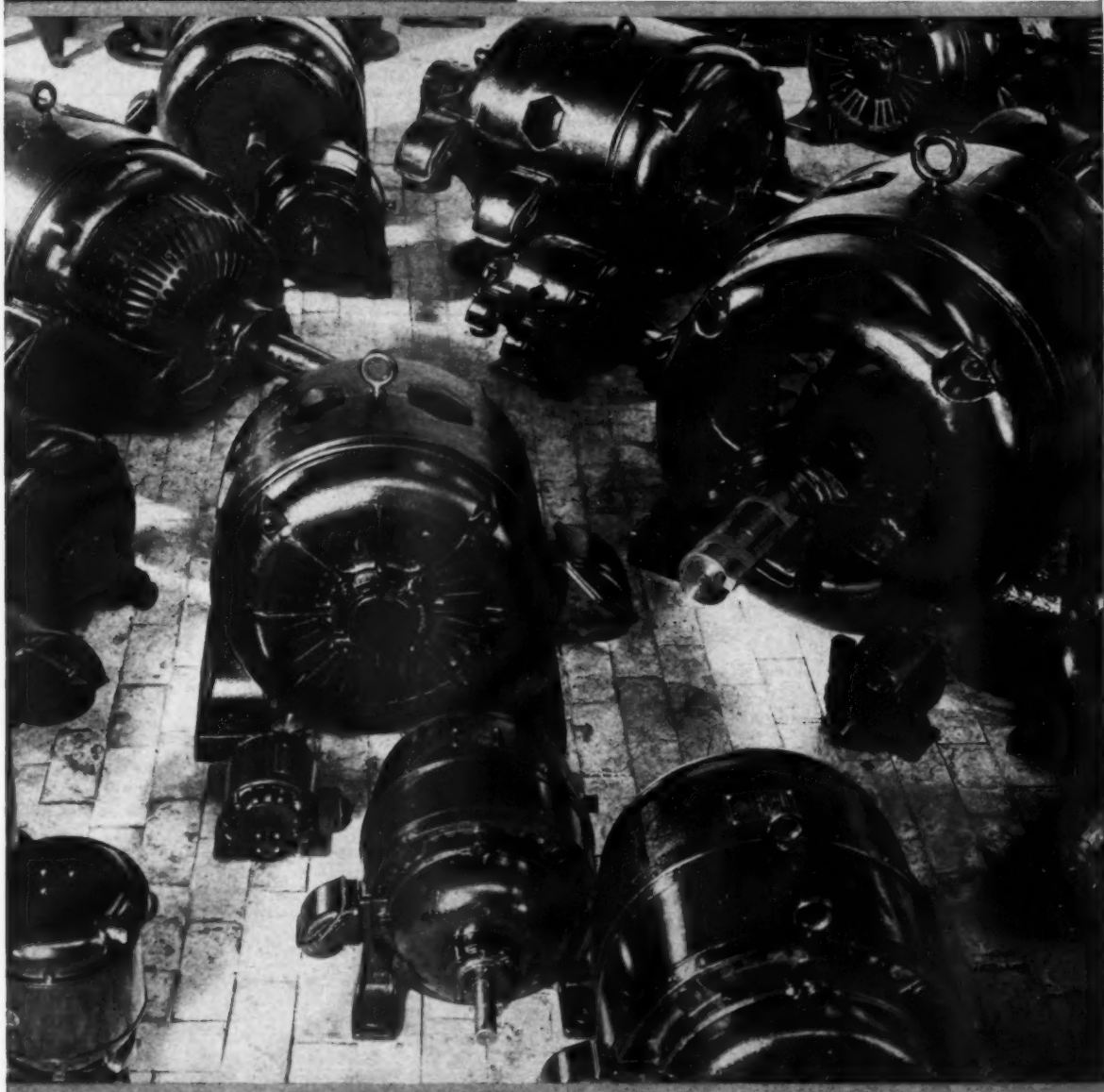
PORCELAIN NO CLAMP BUSHINGS

Multi- With Spring Clip, Not Threaded



Catalog No., Multi	90A	90B	91	92A	92B
Size of Hole	1/4"	1/4"	1/4"	1/4"	1/4"
To Fit Hole	1/4"	1/4"	1/4"	1/4"	1/4"
Price	\$.06	\$.06	\$.06	\$.07	\$.07

Which Motor for Your Job?

 In production work the big thing is production. There is one
 best motor for each job...one motor that will give the biggest
 output with the least shut-down. The right motor cannot be
 bought by the horsepower...it must be bought on its produc-
 tion ability in your job. Send your power-drive requirements
 to Wagner for a motor mechanically and electrically right.



Wagner, Quality




 Wagner can advise impartially because Wagner builds
 every commercial type of alternating-current motor.

Literature on Request

 **WAGNER ELECTRIC CORPORATION**

6400 Plymouth Ave., St. Louis

Sales and Service in 25 Principal Cities

 **PRODUCTS . . . FANS . . . DESK . . . WALL . . . CEILING**
 **TRANSFORMERS . . . POWER . . . DISTRIBUTION . . . INSTRUMENT**
 **MOTORS . . . SINGLE-PHASE . . . POLYPHASE . . . DIRECT CURRENT**



AMERICORE RUBBER COVERED WIRE LIGHTS THE WORLD'S LARGEST ARENA

The specifying of this better product for the wiring of the great St. Louis arena—as well as for many of the Nation's leading structures,—bespeaks of a quality and uniform dependability, that has won the unqualified approval of leading architects and electrical contractors.

The many features and advantages of American Steel & Wire Company electrical wires and cables will prove of real interest to you. Detailed information and estimates furnished promptly from any of our offices located in the principal cities.



The new St. Louis Arena cost over \$2,000,000—seats 21,000 people—and is the world's largest under roof amphitheatre.

300 flood lights illuminate this great interior. Including auxiliary buildings, the electrical load will employ 6,605,000 watts. Again American Steel & Wire Company Rubber Covered Wire proves its worth.



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SUBSIDIARY UNITED STATES STEEL CORPORATION

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Other Sales Offices: Atlanta Baltimore Birmingham Boston Buffalo Cincinnati Cleveland Dallas Denver
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U. S. Steel Products Co.: San Francisco Los Angeles Portland Seattle Honolulu

Export Distributors: United States Steel Products Co., 30 Church St., New York City



No. 120
Telephone Outlet



No. 150
Receptacle Outlet
4 1/4" Cover



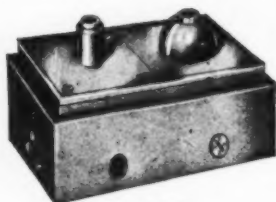
No. 200
Midget
Receptacle
Outlet



No. 130
Receptacle
Outlet



No. 170
Receptacle
30 Ampere



No. 252
Gang Outlet
2, 3 and 4 Sections

"LATROBE" QUALITY PRODUCTS



No. 180
Receptacle
Outlet
30 Ampere



No. 625 Conduit Bender.
Bends 1/2" or 3/4" conduit
merely by reversing mov-
able jaw.



No. 140
Telephone Outlet
4 1/4" Cover

No. 110
Receptacle Outlet



"Bull Dog" Insula-
tor Supports.



"Keystone" Fish Wire



No. 100
Telephone
Outlet



No. 251
Receptacle
Outlet

ELECTRICAL CONTRACTORS

Your next job that requires floor outlets, junction boxes, conduit benders, etc. . . . make it a "Latrobe" installation. Fullman "Latrobe" products mean a quicker and neater job for you and they assure your customers of the highest quality. Order through your jobber!

**[MAIL THIS
COUPON]**

Fullman Manufacturing Co.

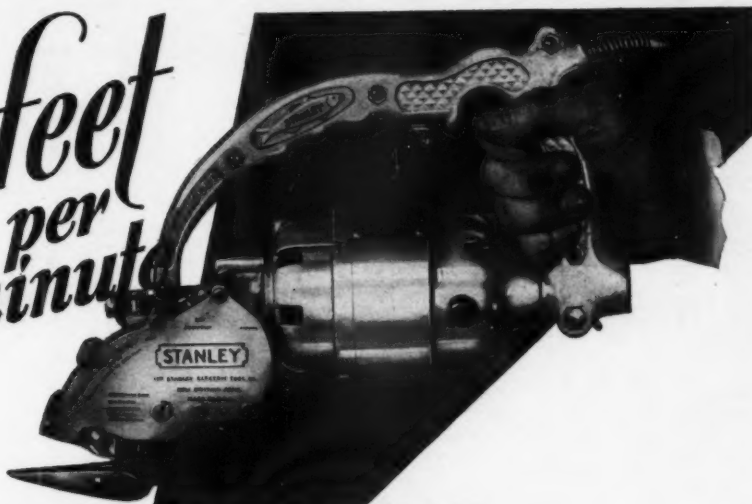
1209-1215 Jefferson St., Latrobe, Pa.

Gentlemen: Please send me more information on the "Latrobe" line of Outlet Boxes, Junction Boxes, Conduit Benders, etc. Also FREE copy of the National Electric Code.

Name.....Address.....

City.....State.....

15 feet per minute



STANLEY-UNISHEAR



"THE MIGHTY MIDGET"
for cutting sheet metal

Price 110 volts, \$75.00
220 volts, \$78.00

WHEN WE SAY you can cut sheet metal with the Stanley-Unishear "Mighty Midget" at the rate of 15 feet per minute we mean on the heaviest gauge the machine will take. The tool will cut any shape — straight cuts, curves and angles. With a minimum radius of 1" it will handle almost anything.

The "Mighty Midget" has a capacity of 18 U.S. Gauge (.050") Iron (softer materials in proportion). It weighs

only 6½ pounds and operates on either AC or DC current. The unique shape of the handle increases its usefulness in any position.

Any shop doing sheet metal work of any kind will find a hundred uses for the Stanley-Unishear. It saves time, saves labor and is perfectly safe to work with.

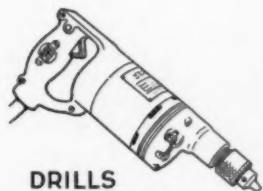
Other Stanley-Unishear models handle up to quarter-inch boiler plate.

Send for full information on these time saving tools.

THE STANLEY ELECTRIC TOOL CO.
New Britain, Conn.

Sales Offices and Service Stations
New York Chicago Cincinnati Philadelphia Detroit

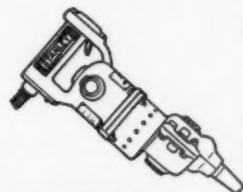
STANLEY ELECTRIC TOOLS



DRILLS

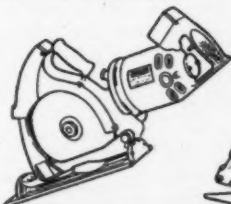


SCREW DRIVERS

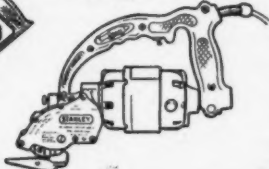


HAMMERS

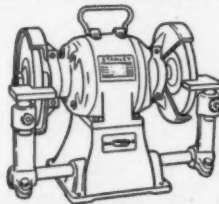
SAFETY SAWS



SHEET METAL
CUTTING TOOLS



BENCH GRINDERS



AERIAL
GRINDERS

PL-8

Boxes, Floor

THREADED COMPOSITION BUSHINGS

Size	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Without Locknut.....	\$.05	\$.11	\$.14	\$.15	\$.20	\$.30
With Locknut.....	.09	.15	.18	.24	.45	.77
Black Composition.....						
For Sockets.....						

BOXES, FLOOR

NON-ADJUSTABLE TYPE

"Full- man" robe" Steel Fullman City Mfg. Co. Co.	Rus- sell & Stoll	Description	Price
477 110	2590	Comp. Out. with Std. Rec. & Bell Nozzle	\$4.50
490 100	2590	" " " " " " " " " " " "	4.00
490 100	2590	Comp. Out. Less Std. Rec. less Nozzle	2.80
491 .....	.....	Comp. Out. with 20A. Polaz. Rec. & Bell Noz.	5.40
499 300	.....	Mid et Out. with 10A. Recept. No Nozzle	2.60
495 .....	.....	Square Out. Less Recept. with Bell Nozzle	5.00
496 .....	.....	Square Out. With 15 Amp. Rec. & Bell Nozzle	6.20
497 .....	.....	Sq. Out. With 25 A. Rec. & Large Bell Nozzle	9.90

ADJUSTABLE TYPE

400 120	2502	Complete-Shallow Box—Less Receptacle	\$4.65
400 .....	.....	Complete-Deep Box—Less Receptacle	5.25
401 130	.....	Complete-Shallow Box With Receptacle	5.60
401 .....	.....	Complete-Deep Box With Receptacle	6.30
420 .....	.....	Complete Large Size Box Without Receptacle	5.95
421 .....	.....	Complete Large Size Box With Receptacle	6.60

ADJUSTABLE GANG TYPE

441 251	2511	Single Gang Less Recept. with 1/2" Cover Plate	\$ 5.40
442 252	2512	Two " " " " " " " " " "	10.80
443 253	2513	Three " " " " " " " " " "	16.20
444 254	2514	Four " " " " " " " " " "	21.60
445	2515	Five " " " " " " " " " "	27.00
Extra for Brass Cover Plate and Receptacle.....Per Gang			1.65

G. E. & T & B BOXES

G. E.	T & B	Description	Price
8000	8000	Utility Outlet Box.....	\$1.00
8200	1700	Two Wire Floor Box.....	5.00
8220-40	1701	Three Wire Floor Box.....	6.00
8300	1200	Special Outlet Extension Type.....	2.90
8400	.....	Master 2 Wire Plug Outlet.....	6.50
8420-40	.....	Master 3 Wire Plug Outlet.....	7.75
.....	100-200	Complete—Cover, Nozzle, Plug and Receptacle.....	4.00
.....	1100	Complete—Cover, Nozzle, Plug and Receptacle.....	8.25

BOXES, CUTOUT

TYPE "A" SURFACE CUTOUT BOXES

Black				White			
Width	Length	3"	4"	Width	Length	3"	4"
Short	Long	Deep	Deep	Short	Long	Deep	Deep
4 1/2"	5	\$.55	.....	12	30	\$10.75	\$12.40
4 1/2"	9	.65	.....	15	15	2.75	4.15
4 1/2"	9 3/4"	.65	.....	15	18	3.00	4.75
6	6	.65	\$.80	15	24	5.70	6.50
6	8	1.00	.95	15	30	13.35	15.30
6	9	.85	1.50	18	15	4.75	5.40
6	12	1.35	1.10	18	21	10.65	12.50
8	8	1.35	1.05	18	24	12.20	13.00
8	10	1.45	1.20	18	30	15.20	15.40
8	12	1.80	1.40	22.5	18	17.80	19.40
9	9	1.15	1.80	23.0	18	19.50	21.30
9	12	1.40	2.15	26.0	24	15.30	17.40
10	10	1.70	1.40	26.5	24	19.10	20.80
10	12	1.95	1.70	26.5	36	22.35	23.75
10	15	2.35	1.85	31.0	24	24.30	26.60
10	18	2.70	3.00	36.0	24	41.35	45.50
12	12	2.25	1.80	36.0	30	27.20	29.65
12	15	2.40	2.10	36.0	36	41.55	47.40
12	18	2.50	4.00	30	42	48.85	53.00
12	24	4.40	5.40	30	48	56.70	61.30

For Galvanized Boxes Add 50% to above prices.

BELLS & BUZZERS

Ansonia

Name	No.	Description	Buzzer	2 1/4"	3"	4"	Cow or Sleigh
.....	656	Sgle. Coil Non Adjust.	\$.45	\$.50	.....	.....	.....
.....	657	Dble. Coil Non Adjust.	.60	.55	.....	.....	.....
.....	652	Dble. Coil Round-Non Adjust.	.60	.65	.....	.....	.....
Wizard	659	Dble. Coil Non Adjust.	.90	.95	.....	.....	.....
Eureka	641	Dble. Coil Adjust. Class B.	1.00	1.05	\$1.25	\$1.60	\$1.90
Acme	631	Dble. Coil Adjust. Class A.	1.35	1.40	1.50	1.85	2.15
Eureka	621	Dble. Wood Box Bell	1.30	1.35	1.45	1.70	1.90
Monitor	658	Round Type	1.35	.....	.....	.....	.....
Monitor	661	Round Type	1.55	.....	.....	.....	.....
Wizard	660	Comb. Bell & Buzzer	1.25	1.35	.....	.....	.....
Wizard	655	Buzzer Oak Mat	1.75	.....	.....	.....	.....
Wizard	666	Watch Case Buzzer	1.30	.....	.....	.....	.....
Ansonia	663	Comb. Bell & Buzzer	1.00	1.10	.....	.....	.....

BELLS AND BUZZERS—Continued

Edwards

Name	No.	Size	Description	Price
Nubel	735	2 1/4"	Two Coil Non-Adjust.—Gray Enam. Bell	\$.65
	736	"	" " " " " " " " " "	.60
Dixie	720	2 1/2"	" " " " " " " " " "	.95
	725	"	" " " " " " " " " "	.90
Combell	737	2 1/4"	Two Coil Non-Adjust.—Gray Enam. Bell & Buzz.	1.15
Tubell	738	"	Dble. Coil Non-Adjust.—Gray Enam. Two Bells	1.25
Cadet	710	2 1/4"	Two Coil—Class B—Adjust. Bell	1.05
	715	"	" " " " " " " " " "	1.00
"	712	3"	" " " " " " " " " "	1.25
"	714	4"	" " " " " " " " " "	1.60
Buz-A-Bell	730	2 1/2"	Two-Coil—Class C Comb. Bell & Buzzer	1.90
Monitor	156	3"	Monitor Bell—Nickel Plated Gong	1.20
Bronx	750	1 1/4"	Nickel Watch Case Buzzer	1.30

Edwards—Lungen

No. 13 Bells	Size	Price
1 1/4"	\$2.00
1 1/2"	1.80
2"	1.90
2 1/2"	2.00
3"	2.20
4"	2.50
6"	9.50
Cow or Sleigh	2.25

No. 15 Buzzers

Size	No. 0	Price
1 1/4" x 1 1/4"	No. 0	\$1.85
2 1/4" x 1 1/4"	No. 1	1.50
2 1/4" x 1 1/4"	No. 2	1.70
3" x 2"	No. 3	2.00
3 1/2" x 2 1/4"	No. 4	2.20

Patrick & Wilkins

Iron Box Bells

Small 2 1/4" Iron Box Bell Non-Adjust. Dble. Magnet.....	\$.75
Fancy Gong Cow or Sleigh Non-Adjust. Dble. Magnet.....	1.65
King Monitor Bell.....	1.65
6" Large Iron Box Bell for Battery Current.....	7.30
S".....	10.50

Buzzers

Small Iron Box Buzzer Non-Adjust. Dble. Magnet.....	\$.75
Watch Case Buzzer Nickleled.....	1.10
Midget Buzzer Nickleled.....	1.85
Wood Box Buzzer.....	2.15
Flush Buzzer with Flush Plate.....	3.25

Wood Box Bells

Regular Type	Price	Large Type	Price
2 1/4" Regular.....	\$ 2.20	6" Regular.....	\$ 6.55
3".....	2.30	8".....	8.00
4".....	2.60	10".....	13.10
Standard Cow or Dinner.....	3.10	5" Dinner.....	11.25
3" Dinner.....	5.15	6".....	13.05
4".....	8.65	5" Cow.....	13.75
3" Cow.....	6.75	6".....	16.00
4".....	10.00	.....	.....

P. R. Stanley & Patterson

Name	No.	Description	Buzzer	2 1/4"	3"
Competition	400-1	Dble. Coil Non-Adjust.	\$.60	\$.65	.....
Eclipse	200-1	" " " " " " " " " "	.90	.95	\$1.95
XXX	211-18	" " " " " " " " " "	1.00	1.05	1.25
Marlo	221-20	" " " " " " " " " "	1.65	1.70	1.85
Eclipse	208	Comb. Bell & Buzzer	1.25	1.25	.....
Competition	402	" " " " " " " " " "	1.25	1.15	.....
Midget	331-34	All Nickleled Bell	1.50	1.85	.....
P. R.	240	Watch Case Buzzer	1.45	.....	.....
P. R.	238	Monitor	1.55	.....	.....

Schwarze

Buzzer	2 1/4"	3"	4"	Tea
Single Coil Bell No. 31 & 32....	\$.60	\$.65	\$.80	\$1.50
Two Coil Bell No. 311-321-331.	.55	.60	.75	.95
Combination Bell & Buzzer No. 331.....	.....	.95	.....	.....
Flush Type Buzzer No. 315....	1.20	.....	.....	.....
Door Bell 26A or 26D.....	.....	1.75	.....	.....

SKELETON BELLS

Any Make

Class A....	2 1/4"	3"	4"	5"	6"	8"	10"	12"
B....	\$5.75	\$6.10	\$7.25	\$8.40	\$10.60	\$16.00	\$25.00	\$31.00
	5.35	5.60	6.65	7.85	8.95	14.45	21.40	27.60

BELL PUSH BUTTONS, TREADS, ETC.

PUSH BUTTONS, ETC.

Ansonia

Round Stamped	1 1/4"	Diameter	Price
E-33	1 1/4"	Diameter.....	\$.75
506	1 1/4"	Diameter Fixed Back.....	.30
507	1 1/4"	With Card Holder.....	.50
513	1 1/4"	Diam. Loose Back.....	.95
514	1 1/4"	" " " " " " " " " "	.45
515	2 1/4"	" " " " " " " " " "	.55
527	2 1/4"	" Fixed Back.....	.40
579	1 1/4"	" 562 Center.....	.75

ELECTRICAL CONTRACTING

PL-8

Brackets

HOUSE BRACKETS WITHOUT INSULATORS

National Elec. Products					
Light Type			Heavy Type		
No.	Points	Price	No.	Points	Price
108-10	1	\$.25	108-10	1	\$.35
108-26	2	.60	108-26	2	.85
108-29	2	.60	108-29	2	.85
108-36	3	.95	108-36	3	1.20

HOUSE RACKS WITH INSULATORS

National Elec. Products					
No.	Points	Length	Each	No.	Points
104-10	1	5 1/4"	\$.40	101-24	2
104-26	2	11 1/4"	.85	101-28	2
104-33	3	11 1/4"	1.00	101-34	3
104-36	"	15	1.25	101-38	"
104-53	5	15	1.65	101-44	4
104	Insulator Only		.10	101-54	5

WIREHOLDER ACCESSORIES

National Elec. Products					
No. 5000 Corner Chair	...	\$.13	No. 5010 Break Arm Strap	...	\$.14
No. 5020 Insulator	...	.18	No. 5051 " " Bolt	...	.20
No. 5021 U Bolts & Nuts	...	.10	No. 5052 T Head Screw	...	.03

SINGLE POINT WIREHOLDERS

National Elec. Products					
No.	Points	Length	Each	No.	Points
5211	1	5 1/4"	\$.25	5411	1
5214	2	11 1/4"	.35	5414	2
5215	3	15	.45	5415	3

WIREHOLDERS WITH INSULATORS

National Elec. Products					
For One Wire		For Two Wires		For Three Wires	
No.	Each	No.	Each	No.	Each
No. 5011	\$.25	No. 5002	\$.60	No. 5003	\$.85
No. 5001	.25	No. 5012	.60	No. 5023	.85

WIREHOLDERS WITH INSULATORS

National Elec. Products					
No.	Points	Length	Each	No.	Points
105-1X	1	5 1/4"	\$.30	106-1	1
105-10	1	4 1/4"	.30	106-10	1
105-26	2	10 1/4"	.60	106-26	2
105-29	2	13 1/4"	.60	106-29	2
105-34	3	13 1/4"	.85	106-36	3
105-36	3	16 1/4"	.85	106-36X	3
105	Insulator Only		.12	106	Insulator Only

B-SUNDRIES, BOLTS, ETC.

CARRIAGE BOLTS

Galvanized					
	3"	3 1/2"	4"	4 1/2"	5"
1/4" Diam. Each	\$.05	\$.05	\$.05	\$.06	\$.07
3/8" " "	.08	.09	.09	.10	.11

MACHINE BOLTS WITHOUT WASHERS

Galvanized					
Diam.	3"	4"	5"	6"	7"
1/4" Each	\$.05	\$.06	\$.07	\$.08	\$.09
3/8" " "	.08	.09	.10	.11	.12
1/2" " "	.12	.13	.14	.15	.16
3/4" " "	.15	.16	.17	.18	.19

STOVE BOLTS

Round or Flat Head					
Length	3"	4"	5"	6"	7"
Up to 1"	\$.10	\$.10	\$.12	\$.15	\$.20
1 1/4" to 1 1/2"	.10	.10	.12	.15	.20
1 3/4" to 2"	.10	.10	.12	.15	.20
2 1/4" to 2 1/2"	.10	.10	.12	.15	.20
2 3/4" to 3"	.10	.10	.12	.15	.20
3 1/4" to 3 1/2"	.10	.10	.12	.15	.20

TOGGLE BOLTS, STEEL

"Paine"					
Size—Diameter	2"	3"	3 1/2"	4"	5"
1/4" Long Price Each	\$.10	\$.10	\$.10	\$.10	\$.10
3/8" " " "	.10	.10	.10	.10	.10
1/2" " " "	.10	.10	.10	.10	.10
3/4" " " "	.11	.11	.12	.13	.13
1" " " "	.13	.13	.14	.14	.15

NOTE: For Brass Toggle Bolts—2 1/4 times above prices.

ROUND FIXTURE BLOCKS

3" x 4" Round	4 x 5" Round	5 x 6" Round
\$.12	\$.13	\$.18
Ceiling Button—P & S Porcelain No. 170—Each	...	\$.12
Switch Bases—See Snap Switches Page PL-10.	...	...

CORDS, FIXTURE, LAMP AND HEATER

SINGLE FIXTURE CORD

Single Lamp Cord					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
Single Cotton Covered Cord—Light	F-04	\$.01	\$.02	\$.02 1/2	\$.04
Single Cotton Covered Cord—Heavy	F-32	.01 1/4	.02	.03	.04
Single Artificial Silk Cord—Light	F-04	.01 1/4	.02 1/2	.03	...
Single Artificial Silk Cord—Heavy	F-32	.02	.03	.04	...

DOUBLE LAMP CORD

Regular Lamp Cord					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
Cotton Covered Twisted Pair	C	\$.02 1/2	\$.03 1/2	\$.05 1/2	\$.09
" " Parallel Pair	PO	.03	.05	.07	...
" " Twisted Parallel Pair	PD	.03 1/2	.05	...	...
Artificial Silk Twisted Pair	C	.03	.04	.07	...
" " Parallel Pair	PO	.03 1/2	.06	.08	...

REINFORCED CORD

Not Asbestos					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
Cotton Covered Light Type 1/4"	PS	\$.04	\$.05	\$.08	\$.12
" " Heavy " 1/4"	P	.05	.06	.08	.12
Weatherproof Light Type 1/4"	PSWP	.04	.06	...	...
Heavy Type 1/4"	PWP	.05	.06	.08	...

HEAVY DUTY PORTABLE CORD

"Duracord" or Similar. Extra Reinforced					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
P5 Light 2 Cond. Port. Cord	\$.10	\$.17	\$.21	\$.25	\$.31
" P Heavy 2 " " "	.14	.18	.26	.33	.41

ALL RUBBER CORD

"Tirex" "Royal" "Super" "Indestructo" or Similar					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
SJ Junior 2 Conductor Black	\$.09	\$.12	...	...	...
" " 2 " Green	.10	.13	...	...	...
" " 3 " Black	.13	.15	...	...	...
S Type Heavy 2 Conductor Black	.13	.16	\$.22	\$.28	\$.35
" " 3 " " "	.17	.18	.29	.33	.47
" " 4 " " "	.18	.25	.34	.45	.60
" " Sglt. Cond. Black	.08	.09	.10	.12	.15

HEATER CORD

Asbestos Covered					
Type	Price Per Foot	No. 18	No. 17	No. 16	No. 14
Stand. Twisted or Wound Asbest. 1/4"	\$.04	\$.05	\$.05	\$.07	\$.10
American Beauty Heater Cord	...	.09	...	.12	.21
Rockbestos Heater Cord	.07	.07 1/2	.08	.10	.20
Universal No. 9092 Super Flexible	...	.00	...	...	...

"Deltabeston" Heater Cord					
Type	Price Per Foot	No. 18	No. 17	No. 16	No. 14
Type A Asbestos Braid overall	\$.10	\$.11	\$.12	\$.12	\$.18
" C Cotton Braid overall	.08	.09	.10	.11	.15
" D " " on ea. cond.	.08	.09	.10	.11	.16
" E Cotton on ea. Cond. & over both	.09	.10	.11	.12	.17

NOTE—For Armored Cords See Page PL-9.
" Extension Cords See Page PL-10.
" Fixture Wire See Pages PL-26 & 27.
" Bell Wire See Page PL-27.

MISCELLANEOUS CORD

Description					
Type	Price Per Foot	No. 18	No. 16	No. 14	No. 12
x Brewery Cord	CB	\$.04	\$.05	\$.07	...
x Canvasite Cord	CC	.06	.07	.09	...
x Deck Cable	PWP	.06 1/2	.08	.10 1/2	...
x Packinghouse Cable	PKWP	.06	.07	.10	...
x Stage & Theatre Cable	T	.05	.07	.10	\$.13

Note—These prices are based on less than coil lot trade prices.

CONDUCTING BELL CORD

Spun Silk					
Number of Conductors	2	3	4	5	8
Price Per Foot	\$.08	\$.18	\$.20	\$.21	\$.28

Note—For Armored Lamp Cord See Page PL-9.

ELECTRICAL CONTRACTING

Conduit

CONDUIT, ELBOWS, COUPLINGS, BUSHINGS, ETC.

RIGID CONDUIT

	Black Per Foot	Galvd. Per Foot	Cutting & Threading Per Thread	Cutting Only Per Cut
1/2"	.10	.11	.20	.10
3/4"	.13	.14	.20	.10
1"	.18	.20	.25	.10
1 1/4"	.24	.27	.30	.15
1 1/2"	.29	.32	.35	.15
2"	.39	.43	.40	.20
2 1/2"	.62	.50	.50	.30
3"	.81	.90	.60	.30
3 1/2"	1.03	1.12	.70	.30
4"	1.25	1.37	.80	.30

THIN WALL CONDUIT

	1/2"	3/4"	1"
Threadless Thin Wall Conduit, Per Foot.....	\$.09	\$.12	\$.16
Adaptor, Each.....	.08	.12	.20
Coupling or Connector, Each.....	.22	.30	.40

Note—One Coupling with Bushings is Included with Each 10 Foot Length of Conduit.

**ELBOWS OR BENDS, COUPLINGS, OR UNIONS,
BUSHINGS, LOCKNUTS, REDUCERS**
Price Each

Size Each	Bends or Elbows		Couplings		Bushings		Locknut		Erickson Coupl. or Unions	
	Black Galv.	Galv.	Black Galv.	Galv.	Galv.	Galv.	Galv.	Galv.	Galv.	Reducers
1/8"	\$.15	.17	\$.10	.11	\$.02	\$.01	\$.40	\$.21		
1/4"	.19	.22	.14	.16	.02 1/2	.01 1/2	.55	.21		
1/2"	.28	.32	.18	.19	.05	.02 1/2	.75	.28		
3/4"	.39	.43	.24	.26	.08	.05	1.20	.42		
1"	.52	.58	.30	.32	.10	.08	1.66	.56		
2"	.83	.96	.40	.43	.20	.11	3.25	.70		
2 1/2"	1.40	1.60	.57	.63	.30	.19	6.40	1.30		
3"	3.70	4.20	.80	.88	.40	.32	9.75	1.76		
3 1/2"	8.25	9.25	1.08	1.20	.88	.40	....	2.60		
4"	9.50	10.60	1.35	1.45	1.40	.58	....	3.58		

Also on Page PL-10.

Also on Page PL-5.

Also on Page PL-12.

FLEXIBLE METALLIC CONDUIT
"Greenfield", "Flexsteel", or Equivalent

	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	2"
Single Strip Per Foot....	\$.09	\$.12	\$.15	\$.21	\$.38	\$.45	\$.64	\$.79
Double Strip Per Foot....	.11	.14	.17	.24	.42	.50	.71	.88

For Fittings for Metallic Conduit See Page PL-14.
 For Non-Metallic Conduit or Loom See Page PL-15.
 For Steel Armored Cable & Lead Covered See Next Item.

CABLE, ARMORED & NON-METALLIC SHEATHED

**ARMORED CABLE, "BX", "ABC", "FLEXSTEEL", OR
SIMILAR**

			Price Per Foot		
	No. 14	No. 12	No. 10		
TWO CONDUCTOR	Solid	Single Strip	\$.06	\$.10	\$.14
THREE CONDUCTOR	Stranded	" "	.....	.....	.....
FOUR CONDUCTOR	Solid	" "	.09	.13	.17
ONE CONDUCTOR	Stranded	" "	.....	.....	.....
OVALFLEX	Solid	" "	.21	.26	.....
	Solid	" "	.12	.13	.15
	Stranded	" "	.....	.....	.17
	2 Conductor	" "	.07	.11	.13
	3 Conductor	" "	.10	.14	.....

			Price Per Foot		
	No. 8	No. 6	No. 4		
TWO CONDUCTOR	Solid	Single Strip	\$.20		
THREE CONDUCTOR	Stranded	" "	.22	\$.32	\$.49
FOUR CONDUCTOR	Solid	" "	.....	.....	.....
ONE CONDUCTOR	Stranded	" "	.27	.38	.64
OVALFLEX	Solid	" "	.....	.....	.....
	Solid	" "	.16	.20	.....
	Stranded	" "	.18	.21	.34
	2 Conductor	" "	.....	.....	.....
	3 Conductor	" "	.....	.....	.....

Double Strip Armored Cable add 30% to above prices.

Anti-Short Fibre Bushings for ABC Cable, Each.....	\$.01
Clips or Staples % " for Armored or Non-Metallic Cable, Each.....	.01

"B X L" LEAD COVERED ARMORED CABLE

				Price Per Foot		
				No. 14	No. 12	No. 10
Single	Conductor	Solid	Covered	.....	\$.13	\$.16
"	"	Stranded	"	.....	.....	\$.10
Two	Conductor	Solid	"	.....	.28	.35
"	"	Stranded	"	.....	.....	.43
Three	"	Solid	"	.....	.34	.43
"	"	Stranded	"	.....	.....	.50

				Price Per Foot			
				No. 8	No. 6	No. 4	
Single	Conductor	Solid	Covered	.....	\$.23	\$.30	\$.38
"	"	Solid	"	.....	.....	.....	.....
Two	"	Stranded	"	.....	.65	.95	1.10
"	"	Solid	"	.....	.....	.....	.....
Three	"	Solid	"	.....	.78	1.25	1.50
"	"	Stranded	"	.....	.....	.....	.....

ARMORED LAMP CORD

	No. 18	No. 16	No. 14
Single Strip.....			
Plain Armored Lamp Cord, Two Conductors.....	\$.10	\$.12	\$.15
Reinforced Lamp Cord " " .....	.18	.20	.28

Add 30% for Double Strip

NON-METALLIC SHEATHED CABLE
 "Romex", "Loomwire", "Wireflex", or similar

(With or Without Ground Wire)	#14	#12	#10	#8	#6	#4
Wire 2 Conductor per Foot.....	\$0.05½	\$0.07	\$0.10	\$0.15	\$0.21	\$0.30
Wire 3 Conductor per Foot.....	.08½	.12	.15	.23	.30	.43
Fitting-Straps Each.....	.01	.01	.01	.01	.01	.01
Fitting-Clips Each.....	.03	.03	.03	..	..	..
Fitting-Connectors Each.....	.10	.10	.20	.20	.30	.55

CUTOUTS OR FUSE BLOCKS

PLUG CUTOUTS

30 Amp. Porcelain

Description	Price
Single Pole—Main Line.....	\$2500
Double " ".....	.35
Triple " ".....	.50
Double Pole Single Branch.....	.35
" " Double.....	.50
" " Single or Double Cross Branch.....	.80
Triple to D. P. Double Branch.....	.50
Triple Pole Single Branch.....	.35
" " Double.....	.50

DEAD FRONT CUTOUT BASES

Plug Type—30 Amp.

BRYANT		With Short Cover		With Long Cover	
		Numbers	Price	Numbers	Price
Dble.	Pole Sgle Branch.....	71035 or 71035s	\$.95		
	Dble.....	72587	72087	82587 or 82087	\$1.55
	Triple Dble Pole Dbl.Branch	72199	72099	82199	82099
			1.65		1.75
G. E. or TRUMBULL		With Covers		Without Cov.	
		G.E.	Price	G.E.	Price
3	Wire Single Branch--2	2435	2199	2436	
3	" Double " --4	2440	4199	2441	2.00
					2.00

ENCLOSED CARTRIDGE CUTOUTS OR BASES

Porcelain Base, 250 Volts

	0-30 Amp.	31-60 Amp.	61-100 Amp.
Porcelain Base, 250 Volts			
Single Pole Main Line Enclosed Porcelain.....	\$.45	\$.75	\$1.55
Double " " " "	.60	1.55	3.10
Triples " " " "	.90	2.20	4.65
Double Pole Single Branch Porcelain.....	1.85	3.60	..
" Double " " " "	1.45	2.90	..
Triples Double Pole Double Branch Porcelain.....	1.65	4.05	..
Triples Double Pole Single Branch Porcelain.....	1.50	3.30	..
Triples Double Pole Double Branch Porcelain.....	2.50	6.00	..
Single Pole Main Line Cutout Base 600 Volt.....	.65	1.60	1.75

SLATE BASE

SLATE BASE							
250 Volt	600 Volt	30 A.	60A.	100A.	200A.	400A.	600A.
Single Pole-Slate Base-250 V.		\$.55	\$.80	\$ 1.75	\$ 2.85	\$ 6.95	\$ 9.50
" " " " 600 V. ....		.80	1.15	2.00	3.15	7.90	10.25

Prices on cutouts do not include fuses

C-SUNDRIES

GROUND CLAMPS

Standard Adjustable Ground Clamps, any make.		No. 3		No. 4		No. 5		No. 6	
		.12		.15		.20		.25	
Blackburn.....		.24		.28		.37		.45	
Other Types		B & K		1"		1 1/2"		2"	
Chase Shawmut 3661-68		.25		.30		.35		.40	
G. V. A Series 5000....		.26		.32		.37		.43	
G. V. S Series 5000....		.11		.13		.14		.15	

STRAPS, CLIPS OR CLAMPS For Pipe, Without Screws

	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ "	2"	$2\frac{1}{2}$ "	3"
Galvzrd. Straps, 2 Hole	\$.01	\$.01	\$.01	\$.01	\$.02	\$.02	\$.04	\$.05	\$.06
Per Pound.....	\$.20								
Light Steel Straps, 1 Hole	.03	.04	.05	.07	..	.22	.45	.62	.70
Mail Iron Clamps 1 Hole	.06	.07	.08	.10	.16				
P & S Conduit Clamps									
With Bolts-Series 1400	.10	.14	.18	.20		.25			

(See Also Page PL-25)

COLORING & FROSTING LIQUID

	7 ounce Cans	15 ounce Cans	30 ounce Cans	1/4 Pint Bottle	1 Pint Bottle	Quart Bottle
Crescent (McGill).....						
Celco.....	\$2.50	\$4.30	\$7.35	\$1.20	\$2.30	\$4.60
Franco.....					2.30	4.60
Clips for Loom.....					2c Each or 3 for 5c	
Crowfoot.....			1/4, 1/4, 1/4	\$.05 Each	1 1/2 or 3 for \$1.00 Each	

PL-10

Cord & Wire Connectors

CORD & WIRE CONNECTORS

SMALL FIXTURE & WIRE CONNECTORS

Solderless
Insulated Solderless Wire or Fixture Connectors Similar to "Simplex"
"Wirenuts" "Marr" "No Torch" "Wirelets" "Ideal" Etc.—each **\$.10**
Non-Insulated Solderless Wire Connectors—2 Screw—All Metal..... **.10**

SET SCREW CONNECTORS

		Round Brass				
		No. 12-14	No. 10	No. 8	No. 6	No. 4
Wire Size						
Divided Wall—2 Screws.....	\$.10	\$.12	\$.13	\$.14	\$.19	
Hole Thru	2	.15	.16	.17	.24	
	4	.14	.16	.18	.20	.22
						.25
Wire Size		No. 2	No. 1/0	No. 2/0	No. 3/0	No. 4/0
Divided Wall—2 Screws.....	\$.20					
		.28	\$.35	\$.42	\$.70	\$.95
Hole Thru	2		.30			
	4		.34	.38	.55	.70

SOLDERLESS CONNECTORS

Dossert or Penn-Union

Size of Conductor	Up to No. 4	3 to No. 1	No. 0	No. 2/0	No. 3/0	No. 4/0
2 Way S & Elbows.....	\$.60	\$.75	\$.80	\$1.00	\$1.20	\$1.40
Cable Taps.....	.95	1.05	1.20	1.40	1.75	2.10
3 Way S & Y's.....	.95	1.05	1.20	1.40	1.75	2.10
Lugs—All Types.....	.45	.55	.60	.70	.90	1.10

CORD & MOTOR CONNECTORS

		Complete		Body Only		Cap Only	
		No.	Price	No.	Price	No.	Price
Arrow							
Midget Comp.	8238		\$.60				
" " Arrolite	8239		.65				
Motor Conn.							
" " RP-8221		.65	8221	\$.45	RP	\$.12	
" " RL-8221		.60	8221	.45	RL	.20	
" " RA-8222		.55	8222	.45	RA	.13	
" " RM-8222		.65	8222	.45	RM	.25	
" " TM-8222		.70	8222	.45	TM	.25	
" " RH-8224		.90	8224	.60	RH	.35	
" " RG-8281		.90	8281	.60	RG	.35	
" " 8334 & 35		.90					
Bryant							
Motor Conn.	KR-130	.60	130	.45	KR	.20	
" " KG-103		.65	103	.45	KG	.25	
" " KT-130		.55	130	.45	KT	.10	
Hubbell							
Cord Connector	5894	.75	5574	.55	5896	.25	
" " 6116		.70	6118	.55	5964	.15	
" " 6179		.65	6630	.45	6631	.20	
" " 6180		.60	6630	.45	6181	.15	
" " 5518		.75	5574	.55	5420	.25	
" " 7083		1.30	7084	.85	7056	.50	
" " 7090		1.80	7091	1.10	7092	.80	
" " 6408		1.25	6409	.90	6140	.40	
Weber							
Cord Connector	2274	.60	.74	.45	2200	.20	
Wirt							
Cord Connector	.56	.55					

NOTE: For Attachment Plugs and other caps—See Pages PL-16 & PL-17.

E-SUNDRIES

EXTENSION CORDS—MADE UP

With Plug & Socket, but Guards-Lamps & Handles Extra

Length in Feet	With Lamp Cord and Key Socket		With Reinforced Cord and Key Socket		With Artificial Silk Cord and Key Socket	
	No. 18	No. 16	No. 18	No. 16	No. 18	No. 16
4 Foot.....	\$.80	\$.90	\$.95	\$.90	\$.95	\$.95
6 ".....	.85	1.00	1.05	1.00	1.05	1.05
8 ".....	.90	1.10	1.15	1.10	1.15	1.15
10 ".....	.95	1.20	1.25	1.20	1.25	1.25
12 ".....	1.00	1.30	1.35	1.30	1.35	1.35
14 ".....	1.05	1.40	1.45	1.40	1.45	1.45
16 ".....	1.10	1.50	1.55	1.50	1.55	1.55
18 ".....	1.15	1.60	1.65	1.60	1.65	1.65
20 ".....	1.20	1.70	1.75	1.70	1.75	1.75
22 ".....	1.25	1.80	1.85	1.80	1.85	1.85
24 ".....	1.30	1.90	1.95	1.90	1.95	1.95
Length in Feet	With All Rubber Cord and Weatherproof Socket					
	Light		Heavy			
4 Foot.....	No. 18 \$1.10	No. 16 \$1.25	No. 18 \$1.30	No. 16 \$1.40		
6 ".....	1.30	1.50	1.60	1.70		
8 ".....	1.50	1.75	1.90	2.00		
10 ".....	1.70	2.00	2.20	2.30		
12 ".....	1.90	2.25	2.50	2.60		
14 ".....	2.10	2.50	2.80	2.90		
16 ".....	2.30	2.75	3.10	3.20		
18 ".....	2.50	3.00	3.40	3.50		
20 ".....	2.70	3.25	3.70	3.80		
22 ".....	2.90	3.50	4.00	4.10		
24 ".....	3.10	3.75	4.30	4.40		

ELBOWS & BENDS

For Rigid Conduit

		Size 1/2"	3/4"	1"	1 1/4"	1 1/2"
Black.....		\$.15	\$.19	\$.28	\$.39	\$.52
Galv.....		.17	.22	.32	.43	.58
		Size 2"	2 1/2"	3"	3 1/2"	4"
Black.....		\$.83	\$1.40	\$3.70	\$8.25	\$ 9.50
Galv.....		.96	1.60	4.20	9.25	10.00

EXPANSION SHIELDS & ANCHORS

Ackerman-Johnson-Dryvin-Star-Diamond-Cinch-Packtite or Similar

Size of Hole	These Prices Do Not Include Screws.	Inside Diameter	Takes Screw No.	Price Each
3/8"	1/4" to 1 1/4"	3/8"	5-6-7	\$.05
1/2"	1/2" to 1 1/2"	1/2"	5-6-7	.06
5/8"	5/8" to 1 3/4"	5/8"	8-9-10-11	.08
3/4"	3/4" to 1 3/4"	3/4"	8-9-10-11	.06
7/8"	7/8" to 1 3/4"	7/8"	8-9-10-11	.06
1"	1" to 1 3/4"	1"	8-9-10-11	.09
1 1/8"	1 1/8" to 1 3/4"	1 1/8"	12-13-14	.06
1 1/4"	1 1/4" to 1 3/4"	1 1/4"	12-13-14	.09
1 1/2"	1 1/2" to 1 3/4"	1 1/2"	12-13-14	.11
1 3/4"	1 3/4" to 1 3/4"	1 3/4"	12-13-14	.13
2"	Up to 1 3/4"	2"	15 to 18	.08
2 1/4"	2 1/4" to 1 3/4"	2 1/4"	15 to 18	.11
2 1/2"	2 1/2" to 1 3/4"	2 1/2"	15 to 18	.14
2 3/4"	To 1 3/4"	2 3/4"	15 to 18	.11
3"	3" to 1 3/4"	3"	15 to 18	.20

LAG SCREW ANCHORS (Diamond or Similar)

Takes Lag Screw	3/8"	1/2"	5/8"	3/4"	1"
Price Without Lag Screw.....	\$.14	\$.14	\$.17	\$.24	\$.36
Takes Lag Screw.....	\$.42	\$.62	\$.90	\$1.05	\$1.05

FUSES

PLUG FUSES

Standard Plug Fuses—Any Make—\$.07 each or 5 for \$.25
(Some Manufacturers put these fuses up 4 in a box, in which case they should be retailed at 4 for \$.25.)

ENCLOSED FUSES, NON-RENEWABLE

Amps.	Non-Indicating		Indicating	
	Price Each	Price Each	Price Each	Price Each
250 Volts		600 Volts	250 Volts	600 Volts
Fuse	Fuse	Fuse	Fuse	Fuse
1 to 30.....	\$.10	\$.30	\$.20	\$.40
35 to 60.....	.20	.40	.35	.65
70 to 100.....	.60	1.10	.95	1.75
110 to 200.....	1.20	1.85	1.85	2.90
225 to 400.....	2.15	4.10	3.35	6.35
450 to 600.....	4.10	6.00	6.35	9.25
650 to 800.....	8.95	11.00	13.85	17.35

RENEWABLE FUSES

Amps.	Fuses		Links	
	250 Volts	600 Volts	250 Volts	600 Volts
1 to 30.....	\$.50	\$ 1.10	\$.03	\$.08
35 to 60.....	1.00	1.25	.05	.09
65 to 100.....	2.00	3.00	.10	.16
110 to 200.....	4.00	5.00	.15	.18
225 to 400.....	7.50	11.00	.30	.30
450 to 600.....	11.00	16.00	.60	.60

FUSE WIRE

Fused Wire						
Size in Amps.....		1/4	3/8	1	2	
Price Per Pound.....		\$65.00	\$65.00	\$2.60	\$2.30	
Price Per Foot.....		.01	.01	.01	.01	
Size in Amps.....	3	5	6	10	15	
Price Per Pound.....	\$1.95	\$1.50	\$1.50	\$1.30	\$1.30	
Price Per Foot.....	.01	.01 1/4	.02	.02 3/4	.03	
Size in Amps.....	20	25	30	40	50	
Price Per Pound.....	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	
Price Per Foot.....	.04	.05	.07	.08	.10	
Size in Amps.....	60	70	75	80	90	100
Price Per Pound.....	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Price Per Foot.....	.15	.20	.21	.22	.24	.25
Fused Strip Any Amperage.....\$1.00 per lb.						

Fuse Strip Any Amperage....\$1.00 per lb.

OPEN LINK FUSES

Small Wire Type

Size in Amps.....	1 to 30	35 to 60	65 to 100
Numbers.....	00-0-1-2-3	2-3-5	5
Price Each.....	\$.10	\$.14	\$.20

Large Strip Type

Size in Amps.....	25-100	110-200	225-400
Numbers.....	7	7 to 16	10 to 16
Price Each.....	\$.20	\$.30	\$.60
Size in Amps.....	425-600	600-800	800-1500
Numbers.....	10 to 16	28	40
Price Each.....	\$1.00	\$1.75	\$6.55

STAMPED SHEET METAL LINK FUSES

Type of Link.....	B	C	D	E-F-H-I-L-M
C to C Distance.....	1 1/4"	2 1/4"	2 1/4"	See Catalog
Price Each.....	\$.11	\$.11	\$.16	\$.30

ELECTRICAL CONTRACTING

THREADED CONDUIT FITTINGS

STANDARD TYPES, COVERS EXTRA

"Condulets" "Taplets" "Uniletts" "Electrolets" "V. V."
"Adaptilets" Etc.

	Form 7	1 1/2"	2"	1"	1 1/2"	1 3/4"
A		\$.33	\$.44	\$.60	\$.87	\$ 1.12
B		.40	.50	.70	1.75	2.10
C		.50	.57	.83	1.32	1.71
CO-COV		.70	.91	1.05	1.75	2.25
E		.40	.50	.70	1.12	1.46
F						
	Form 7	.70	1.12	1.75	3.08	4.46
LB-LF-L-LR-LBB		.56	.63	.91	1.47	1.96
LFB-LB-LB-LRB		.56	.63	.91	1.47	1.96
LB-LB-LB-LW		.91	1.12	1.93	1.75	2.30
T All One Size		.67	.80	1.12	1.71	2.37
TA All One Size		.98	1.05	1.40	2.18	3.22
TB-TL-TR		.68	.81	1.12	1.71	2.38
U-UB		.68	.75	1.10	1.76	2.35
X All One Size		.84	1.09	1.47	1.96	2.50
Gaskets		.14	.14	.21	.28	.28
Reducers		.21	.21	.28	.36	.42
Connectors		.40	.42	.49	1.54	1.96
Unions		1.05	1.05	1.40	4.90	6.30

	Form 7	2"	2½"	3"	3½"	4"
A		\$2.32	\$5.46	\$ 6.50	\$10.60	\$11.70
B		3.65	5.46	7.30	9.10	16.65
C		3.40	6.24	8.10	11.70	13.30
CO-COV		4.45	6.75	10.27	16.38	17.95
E		3.00	5.46	6.50	10.60	11.70
F						
	Form 7	7.00	10.66	13.26	23.53	32.50
LB-LF-LL-LR-LBB		8.50	6.50	8.45	13.65	15.60
LFB-LB-LRB		3.50	6.50	8.45	13.65	15.60
LBI-LBR-LW		3.72	8.32	.....	.....	.....
T All One Size		3.58	6.50	9.75	14.30	16.90
TA All One Size		5.53	.....	.....	.....	.....
TB-TL-TR		3.58	6.50	9.75	14.30	16.90
U-UB		4.20	7.80	10.15	16.38	18.75
X All One Size		4.90	7.80	13.00	16.90	20.80
Gaskets		.35	.52	.32	.65	.50
Reducers		.70	1.30	1.76	2.60	3.58
Connectors		3.01	.....	.....	.....	.....
Unions		8.10	.....	.....	.....	.....

COVERS

For Above

[illegible]

RECEPTACLES & ROSETTES

For Above

Plug Receptacles 10 Amp. 2 Pole	2 Watt.	1 1/2"	\$.56	\$.63	\$.70
"	15 "	" 125 "	"	" .63	" .70
"	20 "	" 250 "	"	" .77	" .84
"	30 "	" 250 "	"	" .84	" .91
"	15 "	" 125 "	"	" .91	" .98
"	20 "	" 250 "	"	" 1.12	" 1.19
Lamp Receptacles 10 Watt with Shade Holder.			" .42	" .49	" .56
Conc. Rosettes			" .42	" .49	" .56

FS SERIES FOR FLUSH DEVICES
Shallow Type Without Covers, Any Make

No. Gangs	No. Pipe Outlets	Series	3/4"	1"	1 1/2"
Single Gang	One	FS-FSA	\$.91	\$1.08	\$1.16
	Two	FSC-FSL-FSR- FSLA-FSS-FSAA	1.05	1.26	1.54
" "	Three	FSCA-FSCC- FSCF-FST	1.40	1.75	2.03
" "	Four	FSX-FSCD	1.68	2.10	2.34
Two Gang	One	FS-FSA	1.68	1.82	1.96
	Two	FSC-FSS	1.82	2.10	2.34
	Three	FSD	2.03	2.17	2.31

March, 1930

FS SERIES FOR FLUSH DEVICES—Continued

No. Gangs	No. Pipe Outlets	Series	3/4"	3/8"	1"
2 Gang Tandem	One	FS	2.31	2.45	2.50
	Two	FSC	2.45	2.59	2.73
Three Gang	One	FS-FSA	2.31	2.45	2.50
	Two	FSC	2.45	2.59	2.73
	Four	FSD	2.73	3.01	3.32
Four Gang	One	FS-FSA	2.31	2.45	2.50
	Two	FS-FSSE	2.45	2.59	2.73
	Five	FSD	3.44	4.00	4.34

COVERS FOR FS FITTINGS

	Description	Single Gang	2 Gang	3 Gang	4 Gang
Metal Cover for Flush Push Button Tumbler or Rotary Switches.....		\$.21	.42	.63	.84
Metal Cast Covers Guarded for Switches.....		.50	91	1.40	1.96
“ “					

COMBINATION COVERS FOR FS SERIES

2	Gang for One Switch and one Sgle. or Duplex Receptacle.....	\$.70
2	" " " " " " Bull's Eye with Jewel	1.75
2	" " " " " " One lift cover Receptacle	1.05

NOTE: Although our prices on conduit fittings apply to all makes we use
Crouse Hinds' numbers and lists for convenience.

G & H WITHOUT ADJUSTABLE BAR

Type Crouse Hinds or Similar	5 Amp.			10 Amp.		
	$\frac{3}{4}$ "	$\frac{3}{4}$ "	1"	$\frac{3}{4}$ "	$\frac{3}{4}$ "	1"
G.....	\$.56	\$.70	\$1.05	\$.70	\$.91	\$1.19
GL.....	.63	.77	1.26	.77	.98	1.50
GA-GLA-GT.....	.84	.98	1.33	.98	1.19	1.80
GTA-GX-GXA.....	1.05	1.19	1.66	1.19	1.40	1.92
H.....	.42	.56	.91	.56	.77	1.05
HLA.....	.49	.63	.98	.63	.84	1.19
HH.....	.46	.70	1.05	.70	.91	1.33
HHC.....	.84	.98	1.33	.98	1.19	1.50
HLA.....	.63	.77	1.12	.77	.98	1.36

Type Crouse Hinds or Similar		20 Amp.	
G.	$\frac{1}{2}$ "	\$1.05	\$1.40
GL	$\frac{1}{2}$ "	1.19	1.61
GA-GLA-GT	1.25	1.40	1.85
GTA-GX-GXA	1.60	1.68	2.24
H.	.84	.91	1.36
HA	.91	1.46	1.85
HHL	.94	1.05	1.46
HLC	1.25	1.40	1.85
HLA	1.05	1.19	1.61

G & H WITH ADJUSTABLE BAR

Type Crouse Hinds or Similar	5 Amp.			10 Amp.		
	$\frac{3}{4}$ "	$\frac{1}{2}$ "	1"	$\frac{3}{4}$ "	$\frac{1}{2}$ "	1"
G.....	\$.77	\$.91	\$1.26	\$.91	\$1.12	\$1.40
GL.....	.84	.98	1.33	.98	1.19	1.50
GA-GLA-GT.....	1.05	1.19	1.54	1.19	1.19	1.68
GTA-GX.....	1.26	1.40	1.89	1.40	1.61	2.03
GXA.....	1.50	1.71	2.17	1.71	1.82	2.31
H.....	.63	.77	1.12	.77	.98	1.26
HA.....	.70	.84	1.19	.84	1.05	1.33
HG.....	.91	.91	1.19	.91	1.12	1.40
HHC.....	1.05	1.19	1.54	1.19	1.40	1.68
HLA.....	.84	.98	1.33	.98	1.19	1.50

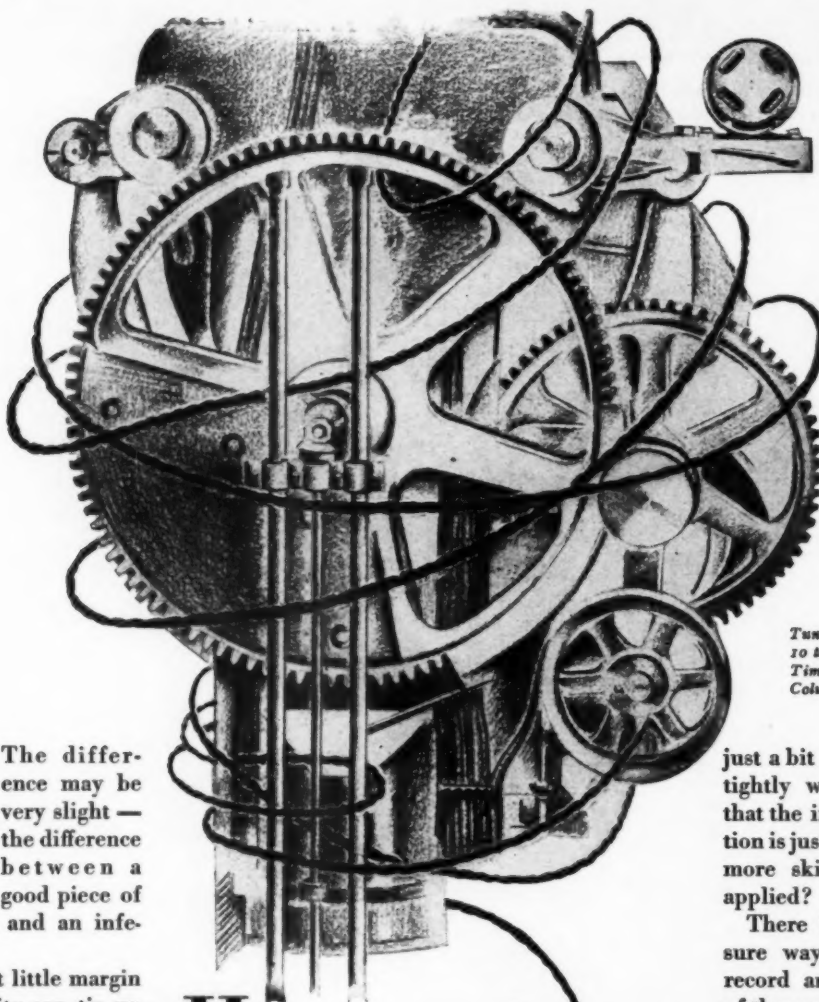
Type Crouse Hinds or Similar	$\frac{3}{4}$ "	20 Amp. $\frac{1}{2}$ "	1"
G.....	\$1.26	\$1.33	\$1.68
GL.....	1.33	1.50	1.99
GA-GLA-GT.....	1.54	1.68	2.10
GTA-GY.....	1.75	1.96	2.52
GXA.....	1.96	2.24	2.90
H.....	1.19	1.19	1.54
HA.....	1.19	1.26	1.68
HR.....	1.26	1.33	1.68
HHC.....	1.54	1.68	2.10
HLA.....	1.33	1.50	1.99

COVERS FOR G & H SERIES

Description	For G & H Fittings Without Adjustable Bar			For G & H Fittings With Adjustable Bar 5 & 10		
	5 Amp.	10 Amp.	20 Amp.	5 Amp.	10 Amp.	20 Amp.
Porcelain Cover with Wire Holes . . .	\$.28	\$.35	\$.56	\$.21	\$.20	\$.50
Blank Sheet Steel Cover . . . . .	.21	.28	.35	.14	.14	.50
" " Cast " " " "	.35	.42	.56	.28	.50	.50
Sheet Steel with 1/4" Brass Nipple . .	.35	.42	.49	.28	.42	.50
" " " 3/8" " " " "	.42	.49	.56	.35	.50	.50
" " " 1/2" " " " "	.50	.56	.63	.42	.56	.50
" " " 3/4" " " " "	.56	.63	.70	.50	.63	.63
Receptacle Covers No Shadeholder . .	.70	.70				
" " With " " " " " "	1.12					

DEVICES FOR G & H SERIES

Lamp Receptacles one piece with or without Shadeholder Groove.....	\$.35
" " two " " " " " "	.70
" " " " without " " " "	.63
Cord Rosette Porcelain.....	.96
" " Composition.....	.76



Tune in on the Graybar Hour,
10 to 10:30 Eastern Standard
Time every Tuesday night...
Columbia Broadcasting System.



The difference may be very slight — the difference between a good piece of

insulated wire and an inferior one.

But just that little margin of dependability can tie up (or not tie up) machinery, plans, and programs at crucial moments.

Wise electrical contractors know that a few cents' difference in initial cost and quality makes dollars' difference in final expense. They know that public appreciation of this difference is growing steadily.

But is there some way in which good wire, good conduit, and good wiring supplies can beyond doubt make their dependability manifest in advance? Some way that will reveal that the copper is more nearly electrolytically pure, that the rubber is just a bit more homogeneous, that the braid is



just a bit more tightly woven, that the insulation is just a bit more skilfully applied?



There is a way — and a sure way. The name, the record and the experience of the supplier are a positive guide to quality and dependability — more truly so in wire, conduit and wiring supplies than in things whose virtues are less hidden.

There is, for instance, an entire class of wiring supplies — complete to the last and least item — and endorsed by a name which goes back to the beginning

of the electrical industry. The record of these wiring supplies is a record of electricity in America. The experience of the supplier is an experience with every conceivable kind of electrical installation. Of course... obviously... they are Graybar wiring supplies.



How to tie up the works... and how not to tie them up...

Offices in 76 Principal Cities
Executive Offices: Graybar Building
Lexington Ave. and 43rd St., New York

GraybaR



THE GRAYBAR TAG—
SYMBOL OF
DISTRIBUTION

You may be able to sell unknown switches . . . but you are blamed if they fail « « «

BY working needlessly hard, you can "put across" safety switches and other wiring material of questionable reputation or unknown quality. But if they fail to perform satisfactorily "on the job" your reputation suffers.

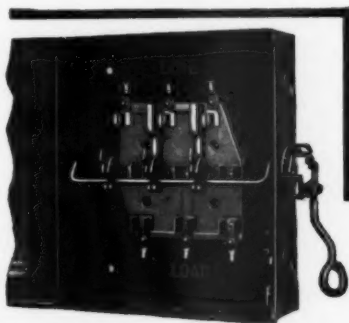
Far better it is to play safe all around . . . to specify Safety Switches which are *known* to your prospect and therefore easy to sell . . . reputable, guaranteed switches . . . Cutler-Hammer Safety Switches.

As long as they are on the job, C-H Safety Switches are building satisfaction for you, an increased reputation and greater certainty of repeat business from

the same customer. Nor do all their superiorities lie in the better workmanship, superior materials and design.

The C-H Standard Duty Type C Switch, for example, is quick *make* and quick break, assuring reduced arcing, elimination of slow burning and fusing . . . greater life at less maintenance cost. Smaller in size, it takes up less space, yet is easier to install and wire.

Other C-H Safety and Meter Switches are carried by your wholesaler and are described in the C-H Safety Switch Catalog, a copy of which will be sent at your request.



Advantages of C-H "Standard Duty" Type C Switch

(Bulletin 4131)

Quick make and quick break prevents burning of contacts, gives far longer life. Molded crack-proof base. Rugged construction. Small case, yet easy to wire. Removable handle to prevent tampering. Six sizes, from 30 to 400 amps. 250 and 600 volts.

CUTLER-HAMMER, Inc.

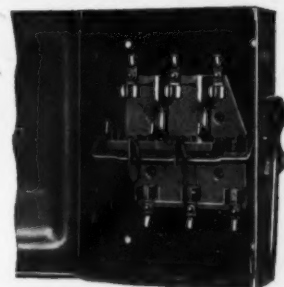
Pioneer Manufacturers of Electric Control Apparatus
1307 St. Paul Avenue
MILWAUKEE • WISCONSIN



Advantages of C-H Universal Meter Service Switches

(Bulletin 4311)

First standard device offering economical provision for branch circuits. Compact switch-block combines enclosed sealed main fuse and exposed accessible branch fuses in one unit. One or two blade types for two or three wire installations. Circuit dead fuse type. Connections conveniently located.



Advantages of C-H Light Duty Entrance Switch

(Bulletin 4141)

Type C design and construction. Smaller in size, ample wiring space. Smaller switch bases. Quick break to reduce arcing and prolong life. Plug fuse or cartridge fuse type. 21 sizes, from 30 to 100 amperes, 125 and 250 volts. Low price.

CUTLER HAMMER

High Quality Safety Switches For Every Service

(A-375)



"Every To prove Friends and

Mr. S. C. Sachs, President of S. C. Sachs, Inc., St. Louis, Mo., believes in using his experience and that of his organization to make certain complete modern wiring is installed on every job they do. Architect—builder—home owner—all welcome his help, for they realize the necessity of expert wiring advice in these days of the increasing use of electricity. How well this policy has succeeded is borne out by the fact that S. C. Sachs, Inc., is one of the most prosperous contractors in St. Louis.

"**W**E see in every installation effectively and economically made, an opportunity to build future business by giving our customers every benefit of our experience," says Mr. Sachs. "If we are successful it is because we have carried out this idea to the very limit of our ability throughout our period of service as electrical contractors.

"We place first importance upon having every detail of wiring plans correct, complete and modern . . . using every job as an opportunity to prove ourselves to our friends and clients, particularly when some unusual problem is involved.

"Herein," continued Mr. Sachs, "lies the com-

petitive aspect of the electrical contracting business. Clean cut competition not involving price on materials is a problem of planning a layout, efficient in every detail. Such a layout will meet all requirements and enable us to handle our labor to the best advantage.

"We are proud of our reputation," said Mr. Sachs in concluding, "we are proud of our clientele and of their loyalty to us. And we are equally proud of our organization . . . of the men on the job who make the realization of our plans possible."

Mr. Sachs is representative of the constantly increasing number of electrical contractors who use their experience to build new business and

Job offers an OPPORTUNITY Ourselves to our Clients" » » »

« « « says
S. C. Sachs, Inc.

who protect their good will by using Cutler-Hammer Wiring Devices. You can have this same protection by specifying Cutler-Hammer Devices.

The C-H Line of Wiring Devices increases lighting convenience in every corner of the house . . . and there is a C-H Device for every need. C-H quality—backed by 30 years' experience—is your guarantee of satisfactory performance. Your jobber has them.

CUTLER-HAMMER, Inc.

Pioneer Manufacturers of Electrical Apparatus

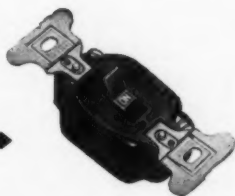
1258 St. Paul Avenue

MILWAUKEE, WISCONSIN

A portion of the office of S. C. Sachs, Inc., St. Louis, electrical contractors.



C-H Toggle Type Surface Switch has a beautiful Thermoplas cold-moulded base, cap of polished nickel, and a black composition operating lever which indicates whether current is on or off. Made in single pole, double pole, 3-way and 4-way types. Approved by the Underwriters.



C-H Catalog 7281 "Rubber-Mounted" Toggle Switch. The mechanism—"full-floating" on two resilient rubber cushions—is extremely simple. No screws, and but one rivet. No metal connections to transmit sound. Short, stubby contact blades are heavy to prevent destructive "bounce" and pitting. Heat-proof, crack-proof Thermoplas case protects mechanism from all foreign material. Single pole, double pole, 3-way and 4-way types. Approved by Underwriters.



C-H Automatic Door Switch is especially convenient for lighting closets. Light turned on automatically when door is opened. Furnished in two types—with approved box for Loom, "BX" or Non-metallic, sheathed cable—or without box, but to fit any standard switch box, for rigid conduit work. Approved by the Underwriters.

CUTLER HAMMER

MODERN WIRING  NECESSITIES

A-300



**Why not
Steeltubes
for concealed work?**

THIS photograph was taken in a fine residence of an exclusive Cleveland suburb. It is reproduced here to show how perfectly STEELTUBES is adapted to every requirement of concealed work. Note the smooth bends . . . the straight runs . . . the workmanlike appearance of the whole job. It is easy to do good work with Steeltubes . . . because it's light—easy to bend—and requires no threading.

Electrical Division
STEEL AND TUBES, INC.
Cleveland, Ohio
(A subsidiary of Republic Iron & Steel Co.)

STEELTUBES (E. M. T.)* has the same inside diameter as heavy conduit—made in three sizes 1 1/4", 1 1/2" and 1 3/4" with wall thicknesses and wall thicknesses shown above. One coupling furnished with each ten-foot length.

*STEELTUBES ELECTRICAL METALLIC TUBING is threadless, strong, light and easy to handle. Costs less to buy. Saves time and money on the job.

PARABEND

Pat. No. 1746011

At Last!
A PERFECT
TUBE AND CONDUIT
BENDER

UNIFORM BEND WITH 1 OPERATION



Simple in
Operation

Perfect in
Performance



The ease with which Parabend Tools are operated and their speedy performance result in a material saving of energy and time. Parabends pay for themselves during the course of a single day's operation. You cannot afford to be without a set.

The Parabend Corporation
609 Huron Street TOLEDO, OHIO

IMAGINE a "kinkless" bend in a single operation . . . the work of an instant. Picture a "perfect" alignment of tubes and conduit, each bend uniform, accurate, and giving assurance that your wire will pull smoothly and with a minimum of effort.

Because of their uniformity, parabends can be figured to the fraction of an inch. Once used, Parabends become indispensable and save their cost during the course of a single day's operation . . . to say nothing of the satisfaction derived from work well done.

Parabend solves the electricians bending problem, once and for all time. Every tool carries a lifelong guarantee without reservation.

Mail this Coupon Today and Save Money

The Parabend Corporation
609 Huron Street
Toledo, Ohio

Please send me the Parabends checked below through my regular source of supply:

NAME OF SUPPLY HOUSE _____
STREET _____ CITY _____ STATE _____
1/2 Inch \$3.00 ☐ 3/4 Inch \$4.00 ☐ 1 Inch \$5.00 ☐

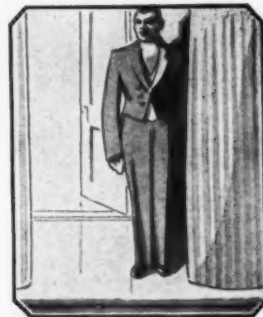
Note: Parabend Sizes specified are for the new, thin wall tubing. If desired for use on heavy conduit, specify the next larger size. For example, 3/4-in. Parabends work with equal satisfaction on 1-in. thin wall tubing and 1 1/2-in. heavy conduit.

My Firm Name is _____

Address _____



*Preserved for
Future Generations*

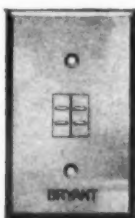


THE progress of civilization, as we of this generation know that progress, is at once marvelous and ruthless. It gives us with one hand the lavish—really luxurious—advantages that are a part of twentieth century living, and with the other destroys and casts into oblivion landmarks that were alive with romance and history of earlier days and peoples.

Fortunate, then, that the Lee Mansion, at Arlington, pictured above, has been saved to this and future generations—to bring back to the minds of its thousands of visitors something of the fine hospitality and brilliant social life of

those times when Robert E. Lee was its master. Fortunate, too, that the Lee Mansion has been given just that modern touch that electricity's advantages could give it. For romantic as the candle and oil lamp of earlier days may seem to us, the instantaneous control of light by the mere touch of a button or switch is more in tune with our living.

And it was fitting that Bryant devices should be chosen in the work of giving this modern touch to the old Lee Mansion. For Bryant is one of the pioneers in the development of devices for the control of electricity yet up to date in meeting modern needs.



Forty No. OD11
Flush Plates



Two No. 120
Receptacles



Thirty-three No. 630
Receptacles



Forty
No. 594 Plugs

The above Bryant "Superior Wiring Devices" were used in this restoration installation

THE BRYANT ELECTRIC COMPANY

BRIDGEPORT
NEW YORK, PHILADELPHIA



CONNECTICUT, U.S.A.
CHICAGO SAN FRANCISCO

MANUFACTURERS OF "SUPERIOR WIRING DEVICES" SINCE 1888—MANUFACTURERS OF HEMCO PRODUCTS



Plenty of Room!

The inside of an Appleton No-Thread Unilet body is "roomy"—due to its rectangular shape, flat bottoms, and the use of malleable iron which makes thinner walls possible, and yet gives greater strength and lighter weight. This gives a maximum of available wiring space—makes the job easier to handle—and saves time and money.

Other features of Appleton No-Thread

Unilets are: Cadmium coated rust-resistance surface, lower wiring costs, a vise-like grip that holds the conduit firmly, ductility and withstanding of vibrations due to special heat treating process.

Our new general catalog has complete information on Appleton No-Thread Unilets, as well as the entire Appleton line. Send for it today.

Appleton No-Thread Unilets are listed as standard by Underwriters' Laboratories in 1/4-inch to 4-inch sizes, inclusive.

SOLD THROUGH JOBBERS

APPLETON ELECTRIC COMPANY

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St.

San Francisco—655 Minna St.

Los Angeles—340 Azusa St.

Seattle—628 Railroad Ave.

APPLETON

No-Thread Malleable

UNILETS

Reg. U. S. Pat. Off.
The Original Threadless Conduit Fittings



APPLETON ELECTRIC COMPANY
1704 Wellington Avenue, Chicago

Gentlemen:

Please send us a copy of New Revised Catalog on Unilets and Conduit Fittings, together with prices.

Name

Address

City

State

	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
A-JB-JU...	\$.84	\$1.05	\$1.60
L	.98	1.19	1.61
T	1.19	1.33	1.50
X	1.33	1.50	1.61
K	1.60	1.61	1.82
KA-KB-KC-KD...	.70	.91	1.33
	.84	1.05	1.60

Lamp Receptacle S. H. Groove . . .	\$.63
No S. H. Groove56
Plug Receptacle 10 & 15 Amp. . .	.70
" " 20 "91
" " 10 " 3-wire. . .	.98
Cord Rosette49
Blank Cast Cover42

Prices include Globe & Guard

		Form 75	
		$\frac{1}{2}$ "	$\frac{3}{4}$ "
V-VA & VDA	as above	\$5.85	\$5.92
VC & VL	" "	5.98	6.11
VT-VD & VE	" "	6.17	6.30
VX	" "	6.30	6.53
VF	" "	6.37	6.50
VD & VJ	" "		6.87
		$\frac{1}{2}$ "	$\frac{3}{4}$ "
V-VA & VDA	as above	\$7.02	\$7.09
VC & VL	" "	7.15	7.28
VT-VD & VE	" "	7.28	7.50
VX	" "	7.41	7.67
VF	" "	7.47	7.60
VD & VJ	" "	7.67	7.80

	Price
	Form Form
	75 102
Globes only, clear glass.....	\$1.12
opal.....	.54
green, blue or orange.....	2.38
ruby.....	3.30
Guards Cast Aluminum.....	3.40
Half Shades.....	2.52
Receptacle With Gasket.....	1.08
Reflector Holders Cast Aluminum.....	.70
Adaptor.....	1.05

(Page 56, Crouse Hinds Cat. 2200 or Similar)									
Pendant or	Bracket	Fixture	with	Recep.	Globe	and	Guard	Form	
75....	\$7.93								
200....	8.84								

STANDARD TYPES
"Kondu" Crouse-Hinds "Appleton" or Similar

Types	Without Covers	14"	34"	1"	14"
A.		\$.46	\$.62	\$.84	\$1.26
B.		.53	.70	.95	1.47
BE		.85	1.23	1.79	2.74
C.		.74	.94	1.33	2.03
CB		1.04	1.34	1.86	2.86
D.		.74	.94	1.29	2.03
E.		.53	.67	.94	1.48
LB-LF-LL-LR.		.81	.98	1.40	2.17
SE.		.81	1.09	1.71	2.66
T-TL-TR.		1.04	1.34	1.85	2.80
TB.		1.47	1.82	2.38	3.53
U & UB.		1.91	2.12	2.92	4.32
X.		1.33	1.82	2.45	3.43
XB.		2.03	2.52	3.29	.....
LBL-LBR-LU.		1.26	1.68	2.31	.....
		14"	2"	24"	3"
A.		\$1.61	\$3.15	\$ 6.65	\$ 8.10
B.		1.96	3.85	6.65	8.10
BE		3.64	6.30	11.79	13.30
C.		2.66	5.11	8.55	11.15
CB		3.85	6.16	9.90	14.30
D.		2.66	5.11	8.55	11.15
E.		1.96	3.85	6.65	8.00
LB-LF-LL-LR.		2.94	5.18	8.80	11.50
SE.		3.99	7.00	11.85	14.85
T-TL-TR.		5.18	6.16	9.90	14.40
TB		5.18	9.00	.....	.....
U & UB.		5.29	6.00	10.10	13.20
X.		4.48	8.33	12.35	19.15
XB.	

	1/2"	3/4"	1"	1 1/2"
H Couplings.....	\$.32	\$.48	\$.83	\$1.11
KO Box Connector.....	.20	.29	.67	1.34
NO ".....	.24	.31	.56	.84
SCA Cable Connector.....	.13	.17	.24	
SLP Short Elbow.....	.39	.52	.83	1.00
KOL Box Connector.....	.67	.93	1.54	.98
KOR Reducer.....	.58	.83		
	1 1/2"	2"	2 1/2"	3"
H Couplings.....	\$1.54	\$3.21	\$4.00	\$6.37
KO Box Connector.....				
NO ".....	1.18	2.49	3.28	4.30
SCA Cable Connector.....				
SLP Short Elbow.....	.33	2.06		
KOL Box Connector.....	2.07	4.30		
KOR Reducer.....				

Blank Metal.....	1½"	¾"	1"	1¾"
Rubber Gasket.....	\$.12	\$.10	\$.32	\$.45
Metal, ¼ Nip.....	.14	.14	.22	.28
" " ".....	.28	.35	.49	.65
" " ".....	.32	.40	.54	.69
" " ".....	.35	.42	.56	.72
" " ".....	.42	.49	.63	.79
Porcelain with Holes.....	.14	.21	.35	.50
Metal, Cord Grip.....	.28	.35	.49
Blank Metal.....	1½"	2"	2½"	3"
Rubber Gasket.....	\$.63	\$.79	\$1.05	\$1.05
Metal, ¼ Nip.....	.28	.56	.84	.84
" " ".....	.86
" " ".....	.86
" " ".....	.96
Porcelain with Holes.....	.68	.84	1.12	1.12
Metal, Cord Grip.....

			1/4"	3/4"	1"
Lamp Recept. without Shade Holder Groove PR....		\$.35	\$.42	\$.49	
" " " " " " " " " " " " " " " " " " " "			.49	.66	
Porcelain for Weatherproof Socket WP2.....		.28			
Polarity Plug Receptacle 10 Amp. P.....		.50	.63	.70	
" " " " " " " " " " " " " " " " " " " "			.70	.78	
			Sgle.	Dble.	3
			Pole	Pole	Fole
Snap Switch 5 Amp. 125 Volt Non Indicating....		\$.70			\$1.26
" " " " " " " " " " " " " " " " " " " "		.77			
" " " " " " " " " " " " " " " " " " " "		1.12	\$1.47		1.47
" " " " " " " " " " " " " " " " " " " "		1.26	1.68		

Type	Any Make					
	1 Gang			2 Gang		
	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
FSE-FSB.....	\$1.05	\$1.26	\$1.40	\$1.82	\$2.03	\$2.24
FSC-L & R.....	1.33	1.61	2.03	2.10	2.31	2.66
FST.....	1.75	2.31	2.73
FSU.....	1.26	1.61	2.03
FSD.....	1.75	2.31	2.73	2.38	2.73	3.08

Type	3 Gang			4 Gang		
	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"
FSE-FSB.....	\$2.73	\$3.01	\$3.36	\$3.64
FSC-L & R.....	3.08	3.36	3.71	3.99
FST.....
FSU.....
FSD.....	\$3.22	3.57	3.85	\$4.27

	One Gang	2 Gang
Blank Metal Plate.....	\$.37	\$.70
Receptacle Plate.....	.28	.38
Toggle or Push Button Switch Plate.....	.38

Type	5 Amp.		10 Amp.		
	$\frac{3}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	1"
OA.....	\$.63	\$.64	\$.77	\$1.05	\$1.33
OC.....	.77	1.05	.91	1.26	1.68
OE.....	1.19	1.54	1.33	1.75	2.24
OEB.....	.56	.77	.70	.98	1.26
OE.....	.91	1.12	1.05	1.33	1.75
OL.....	.91	1.12	1.05	1.33	1.75
OLB.....	1.19	1.54	1.33	1.75	2.24
OT.....	1.19	1.54	1.33	1.75	2.24
OTB.....	1.54	1.96	1.68	2.10	2.80
OU.....	.77	1.05	.91	1.26	1.68
OUE.....	1.10	1.54	1.33	1.75	2.24
OX.....	1.54	1.96	1.68	2.10	2.80
AXB.....	1.89	2.31	2.03	2.52	3.36

Type	2 Amp.		
	$\frac{3}{4}$ "	$\frac{1}{2}$ "	1"
OA.....	\$1.05	\$1.19	\$1.61
OC.....	1.19	1.40	1.96
OEB.....	1.61	1.96	2.52
OE.....	.98	1.12	1.47
OEB.....	1.33	1.54	2.10
OL.....	1.33	1.54	2.10
OLB.....	1.61	1.96	2.52
OT.....	1.61	1.96	2.52
OTB.....	1.96	2.38	3.21
OU.....	1.12	1.47	1.96
OUE.....	1.61	1.96	2.52
OX.....	1.96	2.38	3.21
AXB.....	2.31	2.87	3.71

	5	10	20
	Amp.	Amp.	Amp.
Blank Metal Cover, Round.....	\$.21	\$.28	\$.31
Porcelain Cover, Round with holes.....	.21	.35	.41
Metal Cover with 1/4 or 5/8 Cord Grip.....	.35	.42	.45
Metal Cover with 1/4 or 5/8 male or female nipple.....	.40	.45	.48
Blank Metal Cover with 1/4 or 5/8 male or female nipple.....	.42	.49	.56
Blank Metal Cover with 1/4 or 5/8 male or female nipple.....	.49	.56	.63
Blank Metal Cover with 1/4 or 5/8 male or female nipple.....	.56	.63	.70
Rubber Gaskets.....	.14	.14	.21
Lamp Receptacles Porcelain Edison Base.....	.42	.49	..
Composition T Slot.....	.94

REDUCING BUSHINGS

		1"	1½"	2"	2½"	3"
Large End	¾"	\$4.1	\$5.3	\$7.1	\$8.0	\$10.5
Small End	¾"	.60	.76	.90	1.19	1.55
"	1"	.	.81	.94	1.29	1.60
"	1½"	.	.	1.13	1.43	1.90
"	2"	.	.	1.51	1.90	2.42
"	2½"	.	.	.	2.27	2.97
"	3"	.	.	.	.	3.26

BRANCH TYPE
Series 48

Description		G.E. Steel City or T & B Numbers	Price Each
Branch Box Rectangular for $\frac{1}{2}$ & $\frac{3}{4}$ " Conduit...		SP-48241	\$.25
Cover Metal Flat Closed...		SP-48C1	.10
" " " with $\frac{1}{2}$ " Knockout...		SP-48C6	.10
" " " Pendant Type with $\frac{1}{2}$ " Bushing...		SP-48C8	.12
" " " Pendant Type with $\frac{3}{4}$ " Bushing...		SP-48C11	.16
" " " with $\frac{1}{2}$ " Male or Female Nipple...		SP-48C22 & 23	.80
" " " with $\frac{3}{4}$ " Male or Female Nipple...		SP-48C24 & 25	.80
Cover Porcelain with one or two wire Holes...		SP-48C75 & 76	.14
" " " three or four wire Holes...		SP-48C77 & 78	.15

SHALLOW TYPE Series 14

Description	G.E. Steel City or T & B Numbers	Price Each
Body Octagonal Shape for $\frac{1}{8}$ " or $\frac{3}{16}$ " Conduit.....	SP-14241	\$.35
Cover Metal Flat Closed.....	SP-14C1	.10
" " Raised with $\frac{1}{8}$ " Knockout.....	SP-14C7	.10
Cover Metal Flat Pendant with $\frac{1}{8}$ " Bushing.....	SP-14C8	.12
" " " "	SP-14C11	.16
" " " " with $\frac{1}{8}$ or $\frac{3}{16}$ Male Nip.....	SP-14C22-24	.30
" " " " For all surface Mounted Devices.....	SP-14C28	.12
" " " " Raised for Sign Receptacles.....	SP-14B31-34-35-36	.14
" " " " Flat for all Flats.....	SP-14C29	.12
" " Porcelain with one or two holes.....	SP-14C75 & 76	.14
" " " " Three or Four holes.....	SP-14C77 & 78	.15

DEEP TYPE
Series 34

Description	G. E., Steel City or T & B Numbers	Price Each
Body Deep Octagonal Shape $\frac{1}{4}$ " & $\frac{3}{4}$ "	SP-34461	\$4.40
Cover Metal Blank Flat	SP-3441	1.10
Cover Metal Flat Button Switch	SP-3442 & 3	1.10
" " Single Receptacle	SP-3445	1.10
" " Standard Duplex Receptacle	SP-3447	1.10
" " For GE 30 Amp. Polarized Plug Recept.	SP-34413	1.10
" " GE Tumbler Switches	SP-3443	1.10
" " Hubbell and H&H Tumbler Switches	SP-34415	1.10

COUPLINGS

SP-1410	Complete Coupling for $\frac{1}{8}$ " Conduit.....	Price \$.16
SP-1420	" " " $\frac{1}{4}$" " .....	.20

FITTINGS, ENTRANCE OR SERVICE

"ADAPTI"

	1½"	¾"	1"	1¼"
Ent. Ells with Cov. Ser. 1100.....	\$4.45	\$5.50	\$6.00	\$14.00
" Fitt. with Cov. Ser. 2700.....	.45	.55	.65	1.10
Angle Ent. Fitt. with Cover Ser. 2700....	.50	.55	.65	1.20
Signal Ent. Caps No. 2810-2811.....	.75	.80		
	1½"	2"	2½"	3"
Ent. Ells with Cov. Ser. 1100.....	\$15.50	\$3.00		
" Fitt. with Cov. Ser. 2700.....	1.90	3.00	36.25	\$7.60
Angle Ent. Fitt. with Cov. Ser. 2700....	2.00	3.10	6.30	7.50
Signal Ent. Caps No. 2810-2811.....				

"APPLETON"

	1 1/2"	1 1/2"	1"	1 1/4"
FEB Elbow with Cov. 1700 & 1900.....	\$5.50	\$6.60	\$7.70	\$1.70
FB Elbow with Cov. 1713 to 16.....	.35	.50	.60	
FC End Fitt. with Cov. 1723-33-43.....	.20	.25	.30	
AY Angle Fitt. 1950 to 54.....	.55	.60	.70	1.95
LAY End Fitt. with Cov. 1790 to 94.....	.55	.60	.75	1.35
	1 1/2"	2"	2 1/2"	3"
FEB Elbow with Cov. 1700 & 1900.....	\$1.90	\$3.25	\$7.50	\$9.00
FB Elbow with Cov. 1713 to 16.....	.....	.....	.....	.....
FC End Fitt. with Cov. 1723-33-43.....	.....	.....	.....	.....
AY Angle Fitt. 1950 to 54.....	2.35	.....	.....	.....
LAY End Fitt. with Cov. 1790 to 94.....	1.75	.....	.....	.....

"BEND HICKS"

	1½"	¾"	1"	1¼"
Bend Hacks Galvanized.....	\$.50	\$.60	\$.65	\$1.75
	1½"	2"	2½"	3"
Bend Hacks Galvanized.....	\$2.15	\$4.10	\$6.00	\$8.25

March, 1930

"CAP-SWIVEL-LET"

	$\frac{1}{8}$	$\frac{3}{8}$	1"	1 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	2"
"A" Inside Work #1010 to 1064.....	\$0.20	\$0.25	\$0.30	\$0.55	\$0.55	\$1.30
"BW" Threadless Fitt. 4112-4134.....				.75		
"BW" Threaded Fitt. 2112-2124.....	.35	.45				
"FW" Outside Work 1412-1464.....	.40	.50	.65	1.05	1.80	3.00
"LB" Service Entrance 3110-3130.....		.60	.55	.65		
Type "A" for Nipple $\frac{1}{8}$ " Long.....		\$0.20	For Nipple $\frac{1}{2}$ " Long.....			\$0.25
Type "B" for Nipple $\frac{1}{2}$ " Long.....			For Nipple 1" Long.....			.30
From 1624-1634.....		.35				

"CONDULETS"

Form 6

F Type Ent. Fitt. with Porc. Cov.....	1½"	¾"	1"	1½"
LB Type Ent. Fitt. with Metal Cov....	\$4.40	\$4.45	\$3.00	\$3.95
	.45	.60	.60	1.15
F Type Ent. Fitt. with Porc. Cov.....	1½"	2"	2½"	3"
LB Type Ent. Fitt. with Metal Cov....	\$1.80	\$2.85	.....	.....
	1.40	2.45	.....	.....

"ELECTROLETS"

	1½"	1¾"	1"	1¼"
FB Angle Fitt. with Cov. 713-83.....	\$4.45	\$5.55	\$7.70	\$11.10
KA End Fitt. with Cov. 1013 to 43.....	.20	.20	.25	.30
KB Elbow Fitt. with Cov. 1113 to 33.....	.30	.50	.60	.....
SLB Elbow Fitt. with Cov. 1 to 4.....	.50	.60	.75	1.35
Y Capped Elbow Y1 to 5.....	.50	.60	.65	1.75
	1½"	2"	2½"	3"
FB Angle Fitt. with Cov. 713-83.....	\$1.80	\$3.00	\$7.00	\$8.50
KA End Fitt. with Cov. 1013 to 43.....	.....	.....	.....	.....
KB Elbow Fitt. with Cov. 1113 to 33.....	.....	.....	.....	.....
SLB Elbow Fitt. with Cov. 1 to 4.....	.....	.....	.....	.....
Y Capped Elbow Y1 to 5.....	2.15	.....	.....	.....

"GENERAL ELECTRIC"

With Covers		1 1/2"	1 3/4"	1"	1 3/4"
Ent. Caps Series	1525 to 1532	\$.40	\$.45	\$.60	\$.95
Capped Elbow Series	1470 to 1472	.45	.50	.60	.....
Capped Elbow Series	1480 to 1484	.50	.55	.65	1.80
Insulets Series	1610 to 1612	.15	.20	.25	.....
Insulets Angle Series	1640 to 1642	.30	.45	.60	.....
Entrance Ells	1490 to 1495	.45	.50	.60	1.15

With Covers		1 1/2"	2"		
Ent. Caps Series	1525 to 1532	\$1.60	\$2.75	.....	.....
Capped Elbow Series	1470 to 1472	.....	.....	.....	.....
Capped Elbow Series	1480 to 1484	2.10	.....	.....	.....
Insulets Series	1610 to 1612	.....	.....	.....	.....
Insulets Angle Series	1640 to 1642	.....	.....	.....	.....
Entrance Ells	1490 to 1495	1.50	3.00	.....	.....

GEE-VEE

		1"	1 1/2"	2"	3"
F Service Cap Series 6000.....	\$.45	\$.50	\$.70	\$1.00	\$1.25
B " " " 16000.....	.45	.50	.70	1.75	2.00
F Pipe " " " 1000-1316.....	.40	.50	.75	.85	1.00
" " " 2000 & 2100.....	.45	.50	.75	.85	1.00
FB Universal " " " 3000.....	1.00	1.25	1.65	2.75	3.00
Weathercap " " " 40122.....	.55	.55	.....	.....	.....
Service Elbow " " " 19000.....	.40	.55	.65	1.60	1.75
A Terminal " " " 10000.....	.40	.40	.40	.40	.40
Endo Terminal Series 90000.....	.15	.20	.25	.....	.....

		1½"	2"	2½"	3"
F Service Cap	Series 6000.	\$1.90	\$3.35	\$7.60	\$9.25
B "	" 16000.	1.90	3.35	7.60	9.25
F Pipe	" 1000-1310.	1.25	1.75	3.00	4.12
B "	" 2000 & 2100.	1.25	1.75	3.00	4.12
FB Universal	" 3000.	3.75	5.40	9.50	12.70
Weathercap	" 40122.	3.85	5.40	9.50	12.70
Service Elbow	" 19000.	2.75	3.85	5.40	7.40
A Terminal	" 10000.	2.40	3.45	5.00	6.55
Endo Terminal	" 90000.	2.40	3.45	5.00	6.55

"TAPLETS"

	$\frac{1}{4}$ "	$\frac{3}{8}$ "	1"	1 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	2"	2 $\frac{1}{2}$ "	3"
AR End Fitt. with Bushing.....	\$4.40	\$5.55	\$7.70	\$9.90	\$10.81	\$12.30	\$2.30	\$5.00
BF Angle Fitt. with Covers.....	35	25	65	120	.....	.....	.....	.....
FA End Fitt. with Covers.....	20	20	.....	.....	.....	.....	.....	.....
FB End Fitt. with Covers.....	30	45	.....	.....	.....	.....	.....	.....
FF Service Fitt. with Covers.....	45	45	65	1.00	1.70	2.95	6.25	7.65
FH Service Fitt. with Covers.....	85	1.05	1.50	1.90	3.05	4.00	11.50	12.60
SE Service Elbow with Covers.....	95	1.10	1.25	1.90	2.50	4.20	8.45	9.85

T & B

Ent. Cap 1525-32 with Cover.....	$\frac{3}{8}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "
Capped Elbow 1470-84 with Cover.....	\$.40	\$.45	\$.65	\$1.00
Insulets 1610-11-12 with Cover.....	.50	.60	.70	1.95
Angle Insulets 1640-1-2 with Cover.....	.15	.20	.25	
Angle Insulets 1640-1-2 with Cover.....	.30	.45	.60	
Cable Insulets 2000 with Cover.....	.15			

	1½"	2"	2½"	3"
Ent. Cap 1525-32 with Cover.....	\$1.70	\$2.95	\$6.25	\$7.65
Capped Elbow 1540-84 with Cover.....	2.30	.....	.....	.....
Insulets 1610-11-12 with Cover.....	.....	.....	.....	.....
Angle Insulets 1640-1-2 with Cover.....	.....	.....	.....	.....
Cable Insulets 2000 with Cover.....	.....	.....	.....	.....

"V. V."

	3/4"	1"	1 1/2"	2"	2 1/2"	3"
Type 2 Term. Fitt. with Cov.	\$.60	\$.80	\$.05	\$.15	\$.32	\$.53
Type 6 Term. Fitt. with Bush.	.40	.55	.70	.90	1.30	1.70
Type 9 Term. Fitt. with Cov.	.70	1.05	1.40	2.80	4.40	7.00
FAB with Porc. Cover	.25	.40	.45	.85	1.15	2.35
FC Pipe End Porc. Cover.	.15	.20	.25			
FCBX with Cover	.15					
FL with Cast Cover	.50	.55	.65	1.15	1.35	2.45
FL Bend. Dick.	.50	.60	.65	1.75	2.15	4.10

FITTINGS, "ADAPTI"

ROUND "ADAPTI" BOXES

Series Numbers	Style	1/2"	3/4"	1"
No. 2900 to 2903	1 Back Outlet	\$.40	\$.48	\$.60
No. 3000 to 3003	1 Side Outlet	.43	.50	.74
No. 3100 to 3103	" " "	.40	.48	.60
No. 3100T & 3101T Thrdls.	" " "	.48	.56	.67
No. 3170 to 3173	" " "	.47	.54	.67
No. 3200 to 3203	2 " "	.48	.54	.74
No. 3200T & 3201T Thrdls.	" " "	.60	.68	.94
No. 3270 to 3273	" " "	.60	.67	.94
No. 32170 to 32173	" " "	.54	.60	1.00
No. 3300 to 3303	3 " "	.64	.88	.98
No. 3300T to 3305T Thrdls.	" " "	.82	.95	1.07
No. 33170 to 33173	" " "	.71	.83	1.07
No. 3400 to 3403	4 " "	.80	1.05	1.20
No. 3500 to 3703	2 " "	.54	.60	.75
No. 3800 to 3803	" " "	.54	.60	.80
No. 3900 to 4103	3 " "	.80	.93	1.08
No. 4800 to 5003	4 " "	.94	1.03	1.34

Series Numbers	Style	1/2"	3/4"	1"
No. 2900 to 2903	1 Back Outlet	\$1.10	\$2.00	\$2.70
No. 3000 to 3003	1 Side Outlet	1.30	1.80	2.40
No. 3100 to 3103	" " "	1.10	1.80	2.40
No. 3100T & 3101T Thrdls.	" " "	1.15	1.85	2.46
No. 3170 to 3173	" " "	1.25	2.13	2.70
No. 3200T & 3201T Thrdls.	2 " "	1.40	2.28	2.88
No. 3270 to 3273	" " "	1.40	2.28	2.88
No. 32170 to 32173	" " "	1.34	2.20	2.80
No. 3300 to 3303	3 " "	1.96	2.68	3.00
No. 3300T to 3305T Thrdls.	" " "	1.70	2.75	3.10
No. 33170 to 33173	" " "	1.87	2.90	3.35
No. 3400 to 3403	4 " "	1.40	2.28	3.35
No. 3500 to 3703	2 " "	1.40	2.28	3.35
No. 3800 to 3803	" " "	1.85	2.90	4.00
No. 3900 to 4103	3 " "	1.95	3.55	4.70

PARTS For Above Boxes

Series No.	Description	1/2"	3/4"	1"
500-501-502	Base Only	\$.27	\$.27	\$.54
500X-501X	Extension Ring	.27	.27	.40
501A	Base Concealed to Expd.	.67	.67	.67
0500	" with Tapped Boss	.34	.34	.40
510 to 512	Base	.40	.40	.80
520 to 522	"	.27	.27	.52
530	"	1.80	1.80	2.20
540 to 542	"	.27	.27	.52
30 to 35	Metal Side Plates	.14	.14	.30
40 to 42	Insulated Side Plates	.16	.16	.34
50 to 54	Arm. Flex. Side Plates	.34	.43	.52
60 to 65	Angle Outlet	.16	.24	.43
70 to 75	Elbow Outlet	.24	.30	.50
90 to 93	Connecting Outlet	.28	.34	.47
100 & 101	Straight for No. 500 Base	.16	.24	.43
110 to 113	" " No. 501 "	.28	.34	.43
120 to 125	" " No. 502 "	.47	.53	.67
130 to 135	" " No. 503 "	1.08	1.33	1.60
140 to 145	" " No. 504 "	2.67	3.08	3.48
300 & 301	Threadless Outlet	.20	.28	.34
310 & 311	"	.34	.40	.52

Series No.	Description	1/2"	3/4"	1"
500-501-502	Base Only	\$.54	\$1.08	\$1.08
500X-501X	Extension Ring	.40	.40	.52
501A	Base Concealed to Expd.	.67	.67	.67
0500	" with Tapped Boss	.34	.34	.40
510 to 512	Base	.60	1.60	1.60
520 to 522	"	.52	1.08	1.08
530	"	.52	1.08	1.08
540 to 542	"	.52	1.08	1.08
30 to 35	Metal Side Plates	.20	.38	.38
40 to 42	Insulated Side Plates	.34	.67	.67
50 to 54	Arm. Flex. Side Plates	.67	.94	1.08
60 to 65	Angle Outlet	.48	.94	1.08
70 to 75	Elbow Outlet	.55	1.00	1.14
90 to 93	Connecting Outlet	.40	.47	.52
100 & 101	Straight for No. 500 Base	.48	.94	1.07
110 to 113	" " No. 501 "	.80	1.07	1.07
120 to 125	" " No. 502 "	1.88	2.14	2.40
130 to 135	" " No. 503 "	3.87	4.28	4.67
140 to 145	" " No. 504 "	3.87	4.28	4.67
300 & 301	Threadless Outlet	.40	.47	.52
310 & 311	"	.40	.47	.52

COVERS For Round Adapti Boxes

Numbers	Description	Price
1	Porcelain One Hole Cover	\$.18
2	Metal For Devices	.30
3	Porcelain One Hole Cover	.30
4	Porcelain	.22
5 & 6	Porcelain with 1/4 Male or Female Nipple	.35
7 & 8	" " 3/8 " " "	.35
9 & 10	Malleable with 1/4 Male or Female Nipple	.30
11 & 12	" " 3/8 " " "	.35

NOTE: For "Adapti" Entrance Fittings See Page PL-13.

"GROUNDULET" FITTINGS

Crouse Hinds—Appleton & Similar

Type GCA

Fitting No.	Description	Price
GCA-12 For 1/2" Conduit Without Soldering Lug		\$.75
" " -172 " " with		.84

Type GCD

Fitting No.	Description	Price
GCD-12 Fitting without Lug	1/2" One Strap 3/4" Two Straps	\$.92
GCD-172-22-32 with	" " " " 1" Three Straps	\$1.70
		\$2.65

Type GCE & GCEE

With Strap Clamp Terminal and Lug					
		Size of Water Pipe 1/2 to 2 1/2"	1/2 to 4 1/2"	1/2 to 6 1/2"	
With One Strap for	1 1/2"	Conduit.....	\$1.60	\$1.85	\$2.20
" Two " "	2"	"	3.00	3.45	4.20
" Three " "	3"	"	4.45	5.10	6.20

Type GCE

With Threaded Plug Terminal

GCE-142 For 1/2" Conduit without Lug.....	\$.91
GCE-242 " 3/4" " with Lug.....	1.05
GCE-342 " 1" " with Lug.....	1.20

Type GC

For Open Ground Wire

GC-92	Cast Brass with No. 4 Lug & One Strap	\$.73
GC-922	" " " " 00 Lug & Two Straps	1.45

GC BRASS BUSHINGS For Ground Fittings

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Without Screw or Lug	\$.10	\$.13	\$.20	\$.24	\$.31	\$.46	\$.84	\$1.10
With Screw & Lug	.20	.24	.31	.32	.40	.61	1.00	1.25

TERMINALS, LUGS, JUMPERS, CLAMPS, ETC.

Brass Stud Double End Fits Groundulet Bushings 1/2" to 6" GC52	\$.20
Conduit End Terminal—1/2" GCE1—.37 3/4" GC2—.52 GCE3	.65
Grounding Strap GC100 Per Foot	.25
Jumper Strap GC110 Each	.15
" Cable GC800 Per Foot	.18
" For Bonding Conduit 8" Long No. 808 Per Foot	.40
" " " 12" " " 812 " "	.53
Soldering Clips for Bushings 1/2" to 1 1/2"—.05 2" to 6"	.09
" Lugs GCA130 For GCA and GCD Fittings	.06
" Brass for 1/2" Conduit No. 130—.20 3/4" or 1" No. 160	.30
" " Copper for Bushings 1/2" to 2"—.05 2 1/2" to 6"	.10
Strap Clamp Terminal for Water Pipe 1/2" to 2 1/2"—GCE-012	1.05
" " " 4 1/2"—GCE-014	1.30
" " " 6 1/2"—GCE-016	1.65
" Steel GC101—.35 Brass GC102	.65
Threaded Plug Terminals Iron GCE042—.36 Brass .082	.72
Water Meter Shunt No. GC192	1.80

FITTINGS OR BOX CONNECTORS, ARMORED CABLE

For BX or Armored Cable	Size of K. O.	Price Each
Standard Squeeze Connector 1/2-1/2	1/2"	\$.08
" Set Screw Connector 1/2-1/2	1/2"	.08
" Slip In Connector 1/2-1/2	1/2"	.08
Duplex Connector 1/2-1/2	1/2"	.18

STRAIGHT

BOX	Squeeze or Tangent Type	1/2"	3/4"	1"
CONNECTORS		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"

90 DEGREE

ANGLE BOX CONNECTOR	Squeeze or Tangent Type	1/2"	3/4"	1"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"

45 DEGREE

ANGLE BOX CONNECTOR	Squeeze or Tangent Type	1/2"	3/4"	1"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"

PANEL BOX

ADAPTOR FOR CONVERTING ANY CONNECTOR INTO A PANEL CONNECTOR	1/2"	3/4"	1"
	1/2"	1/2"	1/2"
	1/2"	1/2"	1/2"
	1/2"	1/2"	1/2"

COUPLINGS

FOR FLEXIBLE CONDUIT	For 1/2" Conduit	1/2"	3/4"	1"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"

COUPLINGS FOR

RIGID TO FLEXIBLE CONDUIT	For 1/2" Conduit	1/2"	3/4"	1"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"
		1/2"	1/2"	1/2"

Bushings or Ferrules—Brass .02

FITTINGS FOR "OVALFLEX" ARMORED CABLE

Number	Description	Price
2150-57-60-61	Straps—Fasteners & Bushings	\$.02
2159	Toggle with Wire Loop	.08
2176-2180-2154	Set Screw Connector	.15
2179-2181	Special Box Connector	.10
2155-2156	90 Degree Box Connector	.31
412-413	Connector for Ovalflex to Metal Molding	.35
9050-S	Squeeze Connector	.10

Lamp Guards

LAMP GUARDS

Loxon			
1 Key with each dozen Guards—Extra Keys 10c each			
For Lamps	Fits Socket	McGill Loxon Nos.	Price Each
New Mazda	Brass or W. P.	1420-1420A-1420B	\$0.60
50-60 Watt	Brass or W. P.	1425-142/A-142/B	.60
100 Watt	Brass or W. P.	1426-1428A-1428B	.60
150 Watt	Brass	2443	.80
200 Watt	Brass or W. P.	2444-2446A-2446B	.85
200 Old Style	Brass	2447	.95
200 Old Style	Weatherproof	2447A-2447B	1.00
Reflector Type—15 to 60 Watt for Brass Sockets #1400-1443.....\$0.80			
Reflector Type—15 to 60 Watt for Weatherproof Sockets #1401-1444A&B..... .90			

Hubbell
Non-Locking Type

15-25-40-60 Watt			
No.	Price	73 Watt	Price
Closed Bottom Top & Collar for Brass Socket.....	5573 \$0.45	5578 \$0.50	
Open Bottom with Collar for Brass Socket.....	5485 .35	5487 .40	
Open Bottom No Top or Collar for Brass Socket.....	5691 .30	5692 .35	
Open for Weatherproof Socket.....	5693 .30	5694 .35	
Closed Bottom Top & Collar with Reflector.....	5766 .60		
Open Bottom No Top or Collar Mill Type.....	6095-6 .35		

HANGERS

FOR CABLE & CONDUIT
Mineralallac

Hangers	Lead Covered	Price	Porcelain Bushings	Price
No.	Size		No.	
0	1/4"	No. 14	1	8-2-0
1	1/2"	No. 1 to 4-0	2	3-0-4-0
2	3/4"	10	3	250M-450M
3	1"	500 to 750 M	4	500M-700M
4	1 1/4"	800 to 1125M	5	750M-1000M
5	2"	1500 M	6	1125-2500M
6	2 1/2"	2000 M		

ADJUSTABLE BEAM HANGERS

T & B or Similar

Type A Clamp Including Bolts Fits Flange 2 1/2 to 7 1/2"	Price Each
Type B & C Clamp Including Bolts Fits Flange 7 to 12"	.75
Special Bolts.....	.10

Supports for above Hangers

For One Conduit Steel	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
For Two Conduit Steel	.13	.16	.25	.33	.40	.51	.65	.82	
" Four Conduit Steel	.20	.25	.33	.40	.50				

NOTE: For Price of Complete Hanger add Prices of Clamp & Supports.

HANGERS & PERFORATED BAR

Grabber

Perforated or Extension Bar

For 1/2 to 1 1/4 Conduit Per Foot.....	Price
" 2 to 3" " " ".....	.10
" 3 1/4 to 6" " " ".....	.12

Hangers

No.	Hinge Hanger with Extn. Bar & Lag Screw	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"
1	Band Hanger Extn. Bar and Beam Clamp	.22	.22	.23	.26		
13	Hinge Hanger, Socket and Beam Clamp	.34	.34	.37	.38		
200	Band Hanger Only	.10	.10	.12	.13		
No.	Hinge Hanger with Extn. Bar & Lag Screw	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"
1	Band Hanger Extn. Bar and Beam Clamp	.28	.28	.30	.32	.34	
13	Hinge Hanger, Socket and Beam Clamp	.40	.47	.48	.50		
200	Band Hanger Only	.14	.16	.18	.20		

STANDARD SHADE HOLDERS

Finished

Uno 3 Screw Holder with Screw Top.....	2 1/4"	Price	3 1/4"	4"
Uno 3 Screw Holder with Contractile Collar.....	.10	\$0.30	\$0.40	
Uno Wire Spring Holder with Screw Top.....	.15	.35		
Uno Wire Spring Form H with Collar.....	.30			
Weatherproof 3 Screw Holders Clamp Top.....	.15	.35	.60	

KNOBS, TUBES & CLEATS, PORCELAIN

KNOBS

Type	Price Each	Without Screws
No. 5 1/4 Split Knobs.....	\$0.02 1/2	\$0.02 1/2
5 1/4 Solid Knobs.....	.03	.02 1/2
5 1/4 Nailit ".....	.03 1/2	.02 1/2
5 1/4 Screwit ".....	.03 1/2	.02 1/2
4 & 4 1/4 Knobs Solid.....	.04	.03 1/2
No. 9419 Split 1 1/2 x 1 1/2.....		.07
9420 Split 2 x 2 1/2.....		.12
22 Victor Split.....		.10
6061 Solid Teleph. 2 Groove.....		.07
6062 " " ".....		.10

TUBES

Diam.	3" & under	4"	5"	6"	8"	10"	12"	14"	16"
1/4"	\$0.01 1/2	\$0.02	\$0.02 1/2	\$0.03	\$0.10	\$0.17	\$0.25	\$0.32	\$0.40
1/2"	.02	.02 1/2	.03	.04	.11	.19	.27	.35	.43
3/4"	.04	.05	.06	.07	.13	.21	.30	.38	.47
1"	.07	.08	.09	.11	.15	.25	.34	.43	.52
1 1/4"	.10	.12	.13	.15	.18	.29	.39	.49	.59

CLEATS

2 & 3 Wire

Standard No. 334 2 & 3 Wire Unglazed Cleats without Screws Per Pair \$0.4	
Glazed	.06

ONE WIRE CLEATS
B & D Type—2 Piece

No.	Height	Length	Width	For Size Wire	Price Each
1A	1/4"	1 1/2"	1 1/2"	14 to 0.....	\$0.06
1 1/2A	1/2"	2 1/4"	1 1/2"	2 " 0.....	.07
2A	3/4"	2 1/4"	1 1/2"	0 " 000.....	.11
2 1/2A	1"	2 1/4"	1 1/2"	000 " 200,000 CM.....	.17
3A	1 1/4"	3 1/4"	1 1/2"	000 " 200,000 CM.....	.18
3B	1 1/2"	3 1/4"	1 1/2"	2 " 500,000 CM.....	.20
3 1/2B	1 3/4"	3 1/4"	1 1/2"	5 " 1,000,000 CM.....	.25
4B	2"	3 1/4"	1 1/2"	8 " 1,250,000 CM.....	.35
4 1/2B	2 1/4"	3 1/4"	1 1/2"		

LOOM & L-SUNDRIES

LOOM, NON-METALLIC CONDUIT

Size	7 1/2"	3 1/2"	3 1/4"	3 1/8"	3 1/4"	3 1/8"	1"
Price per Foot.....	\$.02 1/2	\$.02 1/2	\$.09	\$.12	\$.15	\$.17	\$.23

SOLDERING LUGS—One Hole

Sherman-Trumbull or similar

For Wire	Size	Amps.	Size Hole	Price Each
No. 10 Under.....	25		1/8"	\$0.04
8.....	35		1/8"	.04
6.....	50		1/8"	.05
4.....	70		1/8"	.06
2.....	90		1/8"	.08
0.....	125		1/8"	.09
00.....	150		1/8"	.12
000.....	175		1/8"	.18
0000.....	225		1/8"	.31
250 M. C. M.....	237		1/8"	.33
400 M. C. M.....	325		1/8"	.50
450 M. C. M.....	362		1/8"	.70
500 M. C. M.....	400		1/8"	.75
600 M. C. M.....	450		1/8"	.75
800 M. C. M.....	550		1/8"	.96
1000 M. C. M.....	650		1/8"	1.17

For 2-Hole Lugs

With Regular Stud Holes Add 50% To Above Prices.

CONDUIT LOCKNUTS

Also on Page PL-8

Size	Price
1/4"	\$0.01
1/2"	.01 1/2
3/4"	.02 1/2
1"	.05 1/2
1 1/4"	.09
1 1/2"	.11
2"	.19
2 1/2"	.32
3 1/4"	.40
4"	.58

LINKS

For Chain

Non-Insulating Splicing Links—Any Make—Each.....	Price
Insulating	\$0.05
Luminous Acorns—See Page PL-4 and Page PL-18.	.15

MAIL BOXES

COUCH

No. 73 Tilting Mail Boxes Post Office approved per Receiptable.....	\$4.15
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"TILTING" Speaking Tube Type

Series 7303 to 7309 and 73010 to 73012

No. of Boxes	3	4	5	6	7	8	9	10	11	12
Price ea.	16.20	21.60	27.00	32.30	37.80	43.20	48.60	54.00	59.40	64.80

SINGLE GANG Non-Tilting

No. 78 or 780 with call button or speaking tube unit.....	Price each \$3.15
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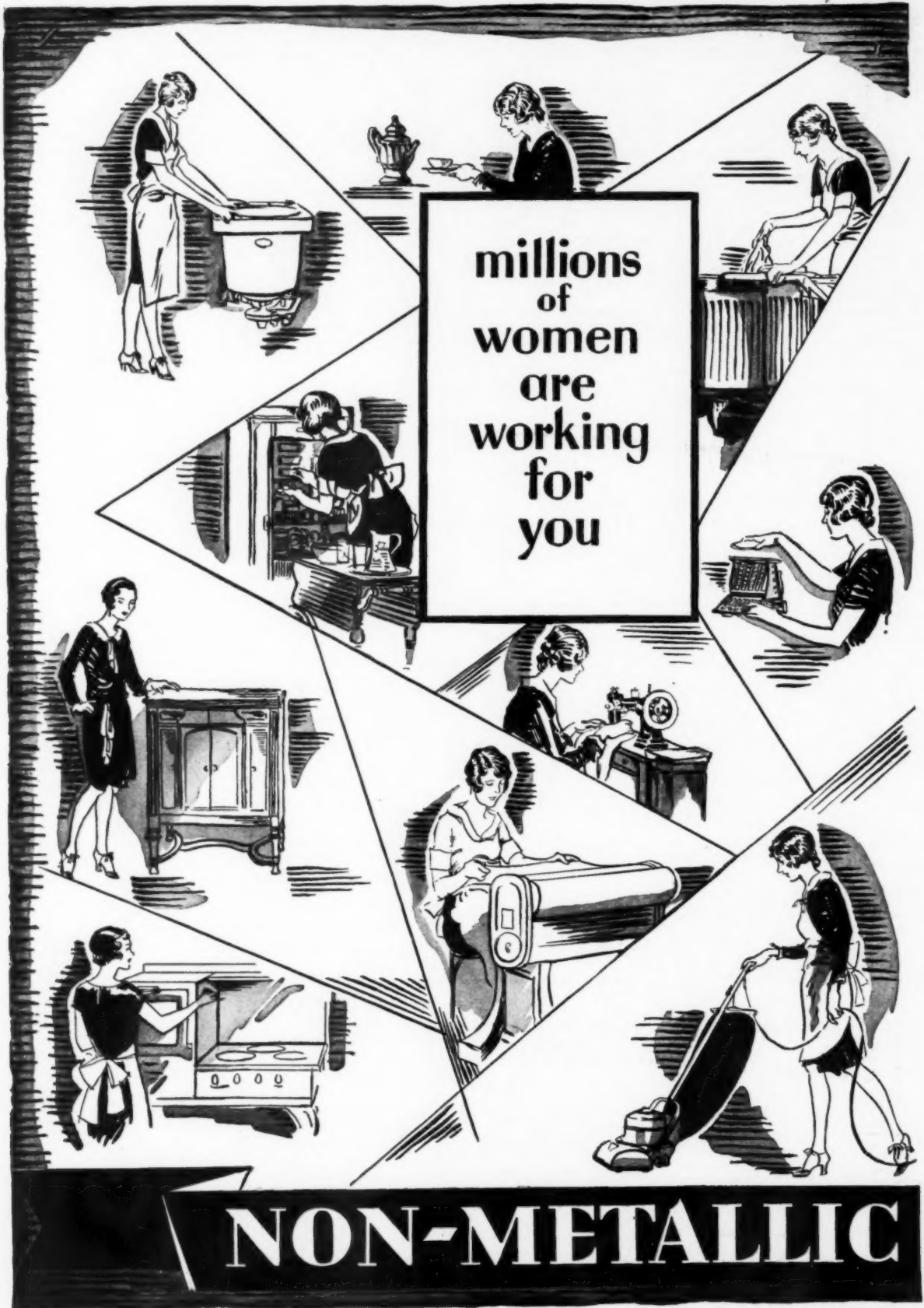
MOLDING, NATIONAL

MOLDING

No.	Description	Price
022	One Piece Metal Molding for Two Wires 1/4" Wide—Per Foot..	\$1.10
044	" " " " " " Two to Four 1" " " "	.12
222	Two " " " " " " Two Wires 1/2" " " "	.11
333	" " " " " " Two to Four 1" " " "	.12

FITTINGS

Number	Description	Price	Number	Description	Price
200-201	Bushing.....	.02	344X	Coupling.....	\$0.04
223	Clip.....	.04	345	Single Strap.....	.05
232	Coupling.....	.06	348	Cord Rosette.....	.38
234	Cross.....	.45	348X	3" Cord Rosette.....	.38
235	Tee.....	.25	354	Double Strap.....	.04
236	90 Deg. Elbow.....	.20	355	Ground Clamp.....	.12
237	45 " " ".....	.20	356-7	Keyless Recep.....	.70
238-9	90 " " ".....	.20	356X	3" Recep. Base.....	.80
278	Adaptor.....	.05	360	Conven. Outlet.....	.90
300	" " ".....	.06	360X	3" Plug Recep. 660W.....	.90
303	" " ".....	.04	363	4 1/4" Split Base.....	.35
315	Connector.....	.40	363A-B	4 1/4" Cover Closed.....	.30
316	90 Deg. Coupling.....	.30	365	4 1/4" Canopy Base.....	.60
317	90 " Connector.....	.30	365A	" " " & Stud.....	.70
321A-B	Rawl Plug.....	.06	365X	4" Comb. Plate.....	.15
323	Joint Cap.....	.03	366	6" Canopy Base.....	.85
334	Cross.....	.40	369X	Open Work Coup.....	.40
335	Tee.....	.30	370	Blank Cover.....	.25
336	90 Deg. Elbow.....	.22	371-23	Porcelain Cover.....	.25
337	90 " Ext. Elbow.....	.22	376	Corner Box.....	.45
337B	Cap for Elbow.....	.10	377	Adaptor.....	.10
338	90 Deg. Int. Elbow.....	.22	377	Snap Switch.....	.90
338B	Cap for Int. Elbow.....	.12	392	Key Socket 2 1/4" Base.....	.75
339X	2 1/2 Comb. Plate.....	.15	397	Key Socket 2" Base.....	.60
340X	Terminal Block.....	.25	400	Base For Socket.....	.70
341	Junction Box.....	.45	400X	3" Recep. Base.....	.70
342	3" 10 Amp. Box.....	.45			
343	2 1/2" 5 Amp. Box.....	.45			
344	Base Coupling.....	.05			



millions
of
women
are
working
for
you

NON-METALLIC

— they are buying and using appliances that demand adequate wiring

And it's Non-Metallic Sheathed Cable business—for they need wiring systems that are more economical—more complete—and built to give uninterrupted service for as long as the house stands.

Non-Metallic Sheathed Cable is easier to handle—easier to fish through old walls

—easier to get to the job—easier to stock—all points upon which you can effect savings.

You can pass these savings along, and yet make a good profit by using Non-Metallic Sheathed Cable.

Remember: There's more profit in Non-Metallic Sheathed Cable.

If you want further information, write to any of the Licensed Manufacturers listed below, for the booklet —“Where and How to Use Non-Metallic Sheathed Cable”

American Circular Loom Company
Anaconda Wire and Cable Company
Collyer Insulated Wire Company
Eastern Tube and Tool Company
General Electric Company
National Metal Molding Division
National Electric Products Corporation
Rome Wire Company
Division of General Cable Corporation
The Wiremold Company
Triangle Conduit Company, Inc.

The above Manufacturers are Licensed under Non-metallic Sheathed Cable Patents number 1439323; 1520680; 1203788; 1673752.

SHEATHED CABLE

CRESCENT'S RANGE FILLS EVERY ELECTRICAL NEED

FOR towering skyscrapers that pour out their thousands at the end of the day and for cozy, built-for-two bungalows in the country; for great turbines that turn the wheels of industry and for ordinary domestic electrical appliances, Crescent has developed a complete line of wire and cable. The entire line is built to a high standard of quality to insure performance year after year; to meet exacting specifications; and to fill every new requirement of advancing industry. Through Crescent, builders and contractors are enabled to secure every type of wire and cable through one reliable source. Branch offices and completely stocked warehouses in most principal cities are prepared to serve you.

CRESCENT
Insulated Wire and Cable Co.
CRESCENT ARMORED WIRE CO.
TRENTON N. J.

*Forty-one Years of Knowing How in
Every Crescent Product*



TIME TELLS
THE STORY

CRESCENT Products

- "Crescent" National Electric Code Rubber Covered Wire and Cable.
 - Intermediate Grade Rubber Covered Wire and Cable.
 - "Imperial" 30% Rubber Covered Wire and Cable.
 - "Crescent" Lead Encased Wire and Cable.
 - "Crescent" A.B.C. Armored Bushed Cable.
 - "Crescent" Lead Covered Armored Cable.
 - "Crescent" Flexible Metallic Conduit.
- All kinds of special wires and cables.



THREADLESS CONDULETS



Type A Threadless



Type B Threadless



Type C Threadless



Type E Threadless



Type LB Threadless

In rigid conduit installations, conditions are sometimes encountered where it is difficult to use threaded conduit fittings. To meet this occasional requirement, the Crouse-Hinds Company offers the Form 7 series of threadless Condulets, which take the same covers and wiring devices as the Form 7 series of threaded Condulets.

The gripping connection to the conduit is strong and rigid, and is so constructed as to insure proper grounding.

After the threadless Condulet is once installed it will not loosen, even though the conduit is turned while installing additional outlets.

Crouse-Hinds Company also manufactures threadless couplings and connectors.

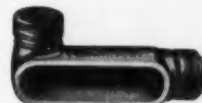
Threadless couplings are for joining two pieces of threadless conduit.

Threadless connectors are for connecting a threaded Condulet to a piece of threadless conduit.

Bulletin 2126 will be sent upon request.



Type X Threadless



Type LL Threadless



Type LR Threadless



Type LF Threadless



Type T Threadless



Type TB Threadless



CROUSE-HINDS



ESTABLISHED 1897
SYRACUSE, N. Y., U. S. A.

SALES OFFICES

NEW YORK BOSTON PHILADELPHIA DETROIT ATLANTA MILWAUKEE CHICAGO ST. LOUIS CLEVELAND CINCINNATI MINNEAPOLIS PITTSBURGH LOS ANGELES SAN FRANCISCO DALLAS SEATTLE

CH478

PL-16 Molding

FITTINGS—Continued					
No.	Description	Price	No.	Description	Price
401	Box Connector.....	\$.24	438	Sgle. Flush Box.....	\$1.00
406	Combination Fitting	.25		“ Surface Box....	.80
407	Utility Box.....	.40	439X	One Gang Box.....	.65
412	Connector.....	.24	439D	“ “ “.....	.80
413	“.....	.28	439S	Sgle. Surface Box.....	.70
414-S	“.....	.24	440	Two Gang Surface Box.....	1.15
419A-B-C	Toggle Bolt.....	.10		“ “ “.....	1.10
420A-B-C	Spring Toggle Bolt.....	.09	440D	Two Gang Box.....	1.15
421	Lead Shield.....	.10	440X	“ “ “.....	1.10
425A	Folding Strap.....	.02		Single Plates 447-48-	
426	Susp. Strap 2 Line.....	.06		50-51-61-91.....	.15
427	“ 3 “.....	.08		Two Gang Plates	
428A	Folding Strap.....	.04		452-62-92.....	.30
430	Fixture Rosette.....	.65		Three Gang Plates	
434	Single Strap.....	.06		453-63-93.....	.40
435	Double Strap.....	.08	441	Single Adaptor.....	.70
436	Coupling.....	.06	442	Two Gang Adaptor.....	1.15
437	45 Deg. Elbow.....	.22	500	Bushing.....	.08
			2155-6	90 Deg. Connector.....	.35

OVALDUCT

3 Wire.....Per Foot \$.18

OVALDUCT FITTINGS

No.	Description	Price Each
24-CQ	Extension box cover for 4" outlet boxes	\$.50
401	Box Connector with 1/2" Locknut	.15
2133	Squeeze Type Coupling 1 1/4" long	.15
2134	90 Degree Internal Elbow	.35
2135	45 " "	.27
2136	One piece 90 degree elbow	.50
2156	90 " Box Connector	.34
2159	Wire Toggle Fastener	.03
2161	Strap Fastener	.02
2181	Connector Ovalduct to Oval Knockout	.10
2662	Outlet Box 4 x 3 1/2	.21
2663	Extension Ring for Boxes	.28
2665	Outlet Box 4 x 3 1/2 with Fixture Stud	.28
2662	" 3 1/2 x 3 1/2	.27
2665	" 3 1/2 x 3 1/2 with Fixture Stud	.30
4170-S1	Sectional Switch Box 4 x 1 1/2 x 1	.38
4172-S1	Spacer for above box	.34

MOLDING, WIREMOLD

MOLDING

No. 500 2-Wire, price per ft.	\$.10
" 700 4-Wire, " " "	.12
" 1000 Master Size, " " "	.25

FITTINGS

	For No. 500 2 Wire Size	For No. 700 4 Wire Size	For No. 1000 Master Size
Coupling	501 \$.04	5701 \$.04	1001 \$.06
Bushing	502 .04	702 .04	1002 .04
Supporting Clip	503 .06	5703 .06	.06
Strap	504 .04	704 .06	1003 .08
Connecting Cover	506 .04	706 .04	1004 .08
Multiple Strap	507 .10	5707 .10	.10
Ground Coupling or Clamp	509 .12	5709 .12	1009 .20
Flat Elbow	511-12 .22	5711-12 .22	1011 .45
Tee Plain	515 .36	5715 .36	.36
Cross Plain	516 .37	5716 .37	.37
Internal Elbow	517 .26	5717 .26	1017 .45
Elbow Pull Box	518 .22	5718 .22	1018 .40
External Elbow	519 .37	5719 .45	.45
Corner Box	520 .55	5720 .55	.55
Narrow Fitting	520A .45	5720A .45	.45
Show Case Fitting	521 .36	5721 .36	.36
One Piece Rosette	522 .60	5722 .60	.60
Two Piece Rosette and Block	523 .70	5723 .70	.70
Fixture Rosette, 3/4"	524 .65	5724 .65	.65
" 1"	525 .70	5725 .70	.70
Receptacle Base	526 .90	5726 .90	.90
Keyless Receptacle	527 1.00	5727 1.00	1.00
Attachment Plug	528-29 .36	5728-29 .36	.36
Utility Box	530 .30	5730 .30	.30
Contact Block	531 .14	5731 .14	.14
Blank Cover	532-33 .45	5732-33 .45	.45
Outlet Box, 2 1/2" or 3"	534 .70	5734 .70	.70
Closed Extension Box	535 .16	5735 .16	.16
Distribution Box	536 .65	5736 .65	.65
Blank Cover	537-38 .85	5737-38 .85	.85
Extension or Fixture Box	539 & A .70	5739 & A .70	.70
Fixture " 6 1/4"	540 .80	5740 .80	.80
Combination Box	541-2 1.05	5741-2 1.05	1.05
Switch or Recep. Box, Single	542 .34	5742 .34	.34
" " 2 Gang	543 .90	5743 .90	.90
Surface Box, Single	544-2 1.20	5744-2 1.20	1.20
" " 3 Gang	545-3 1.25	5745-3 1.25	1.25
Shallow Receptacle Box	546 .70	5746 .70	.70
Push Switch Box	549 1.00	5749 1.00	1.00
" " Shallow	550 1.05	5750 1.05	1.05
Adaptor Plate and Cover, Single	551 .70	5751 .70	.70
" 2 Gang	552 1.25	5752 1.25	1.25
" 3 Gang	553 1.35	5753 1.35	1.35
Blank Extension Box	554 .34	5754 .34	.34
Box Connector	555 .38	5755 .38	.38
Conduit Coupling	556 .38	5756 .38	.38
Elbow Box Connector, 1/2" Male	557 .38	5757 .38	.38
Conduit Elbow, 1/2" Female	558 .38	5758 .38	.38
Combination Connector	559 .25	5759 .25	.25
Offset Connector	560 .70	5760 .70	.70
Openwork Coupling	561 .36	5761 .36	.36
Kick Plate	562 .34	5762 .34	.34

80

Plugs, Attachment

N-SUNDRIES

PIPE NIPPLES Made from Galvanized Wrought Iron Pipe

Length	Size 1/2"	Size 3/4"	Size 1"	Size 1 1/4"	Size 1 1/2"	Size 2"	Size 2 1/2"	Size 3"
Close Nipples	\$.06	\$.06	\$.07	\$.10	\$.14	\$.17	\$.20	\$.23
2 1/4" to 3 1/2" Long	.10	.10	.12	.15	.21	.28	.35	.42
3 1/2" to 4 1/2" "	.11	.11	.14	.17	.24	.31	.38	.45
4 1/2" Long	.12	.12	.15	.18	.25	.32	.39	.46
5' "	.14	.14	.17	.21	.28	.35	.42	.49
6' "	.18	.18	.21	.25	.32	.40	.47	.54
7' "	.20	.20	.23	.27	.34	.42	.49	.56
8' "	.21	.21	.24	.28	.35	.43	.50	.57
9' "	.23	.23	.26	.30	.37	.45	.52	.59
10' "	.23	.23	.26	.30	.37	.45	.52	.59

NOTE RE NIPPLES—Above prices cover nipples made from ordinary Galvanized pipe as used by plumbers. If local rules call for nipples to be made from genuine conduit add the following:
For nipples made from genuine black conduit add 30% to above prices.
For nipples made from genuine Galvanized conduit add 40% to above prices.

CHASE NIPPLES & COUPLINGS

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Chase Nipples, each	\$.10	\$.10	\$.10	\$.25	\$.30	\$.32	\$.45	\$.72
" Couplings "	.12	.12	.12	.14	.15	.15	.15	.15

For Erickson Couplings, see Page PL-S.

CHASE MALE REDUCERS CHASE FEMALE ENLARGERS

T & B or Similar

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
1/2" to 3/4" Reducer, each	\$.20	.25	.34	.45	.50	.60	.70	.80
1 1/4" to 1 1/2" " "	.40	.40	.40	.40	.40	.40	.40	.40

INSULATED

Millonite Insulated Nails, per dozen	\$.05
Leather Nail Heads, " "	.05
Staples Insulated, " "	.05

PLUGS, ATTACHMENT

ATTACHMENT PLUGS COMPLETE

Style	Cap	Blades	Price
Pony Comp.	Composition	Parallel	\$.15
Standard Comp.	Comp.	Parallel	.20
Genuine Bakelite	Bakelite	Parallel	.25
Large Size Comp.	Composition	Tandem	.55
Weatherproof Comp.	One Piece	None	.35
Body Only—Pony			\$.10
Standard			.15
Bakelite			.20

CAPS ONLY—10 AMP. For Attachment Plugs

Comp. Pony	2 Wire	Parallel	\$.10
Comp. Standard	2 Wire	Parallel	.10
Comp. Polarity	2 Wire	Parallel	.15
Comp. Gen. Bakelite	2 Wire	Parallel	.20
Comp. Large Size	2 Wire	Tandem	.25
Comp. Large Size	2 Wire	Polariz.	.35
Comp. Paraline Conv.	2 Wire	Polariz.	.40
Comp. Heavy Duty	3 Wire	Polariz.	.45
Comp. Disapp. Door	2 Wire	Polariz.	.75
Steel Cov. Standard	2 Wire	Parallel	.15
Brass Cov. Standard	2 Wire	Parallel	.45
Brass Cov. Dis. Door	2 Wire	Parallel	1.00
Cord Grip Comp.	2 Wire	Parallel	.30
Cord Grip Comp.	3 Wire	Polariz.	.65
Cord Grip Steel Cov.	2 Wire	Parallel	.50
Cord Grip Steel Cov.	2 Wire	Polariz.	.75
Knostrain All Comp.	2 Wire	Parallel	.45
Knostrain Brass Base			
Comp. Top	2 Wire	Tandem	.85
Knostrain all Brass Cov.	2 Wire	Tandem	.95
Knostrain all Brass Cov.	2 Wire	Parallel	.95

20 AMPS.

Composition	2 Wire	Polariz.	\$.50
Composition	3 Wire	Polariz.	.65
Brass Covered	2 Wire	Polariz.	.90
Brass Covered	3 Wire	Polariz.	1.00
Comp. with Cord Grip	2 Wire	Polariz.	.75
Comp. with Cord Grip	3 Wire	Polariz.	.95
Steel Cov., Cord Grip	2 Wire	Polariz.	.95
Steel Cov., Cord Grip	3 Wire	Polariz.	1.20

30 AMPS.

Composition	2 Wire	Polariz.	\$.75
Comp. Ex. Heavy	2 Wire	Polariz.	1.45
Porcelain Standard	3 Wire	Polariz.	.65
Comp. with Cord Grip	3 Wire	Polariz.	1.65
Steel Cov., Cord Grip	2 Wire	Polariz.	1.80
Steel Cov., Cord Grip	3 Wire	Polariz.	2.15

Flasher Plugs

Diamond Flasher Button	2.50	No. 161	\$.80
Skeedoodle Plug	2.50	No. 165	.90
" " "	.60		

ELECTRICAL CONTRACTING

Plugs, Appliance

Plates & Plugs

PLUGS, APPLIANCE

Make	Number & Description	Price Each
American Beauty.	802 Plug Complete for Small Irons.....	1.35
"	806 " " " Large Irons.....	1.35
"	807 " " " Toasters & Stoves.....	.25
Arrow.....	29000 Pendant Switch Plug.....	1.00
Beaver.....	F1 Gripall Super Type Adjust. Contacts.....	.45
"	F4 " " Nickel Alloy Contacts.....	.55
"	F5 " " Armored Case.....	.55
"	F6 " " Type Arm'd Case Nickel Alloy Cont.....	.60
"	F7 " " High Grade Bakelite.....	.60
"	F22 Suitzall Double Contacts.....	.20
"	F31 " " Single Contacts.....	.15
"	F32 " " Double Contacts.....	.20
"	F32 " " Armored Case.....	.30
"	F34 " " Small Plug Bakelite.....	.30
"	G-1 Gripall Plug Adjust. Contacts.....	.90
"	G-21 Push Button Type.....	.45
"	G-22 New Toggle Type.....	.45
Betsy Ross.....	Safeguard Automatic Heater Control Plug.....	1.50
"	All Appliance Plug.....	.20
Bryant.....	668 Plug Complete with Switch.....	.90
"	752 " " Shorter than 668.....	.65
"	29081 Pendant Switch Plug.....	1.00
Cutler-Hammer.....	7051 Plug Complete with Switch.....	.75
"	7350 Pendant Switch Plug.....	1.00
GE.....	2602 Armored Heater Plug, Brown Compound.....	.25
"	2603 Not Armored Heater Plug, Brown Compound.....	.20
"	2642 " " with Tumbler Sw., Brown Compound.....	.50
"	2295 Pendant Switch Plug.....	1.00
Hemco.....	250 Heater Plug, no Switch.....	.45
Hemco.....	260 Switch Appliance Plug.....	.75
Hotpoint.....	CD6P1 Iron Plug.....	.60
"	CD79P1 " " with Switch.....	1.00
Hubbell.....	7020 Appliance Switch Plug.....	1.00
Kool-Pull (Colts).....	Appliance Plug, no Switch 8037.....	.75
"	" " with Switch 8039.....	1.00
Plugall.....	9 Appliance Plug with Spring.....	.30
"	700 " " Switch.....	.85
Propp.....	5-One 4 All Appliance Plug, no Switch.....	.30
"	55 Standard Iron Plug, no Switch.....	.25
"	56 Armored.....	.55
"	52 Iron Plug with Switch.....	.55
P & S.....	1550 Appliance Switch or Pendant.....	1.00
Red Bird.....	151 Appliance Plug, no Switch.....	.40
Reynolite.....	900 Reynolite Connector Plug, no Switch.....	.50
"	510 " " with Switch.....	.85
Rodale.....	P-21 Appliance Plug No Switch.....	.20
"	P-29 " " Armored.....	.25
"	610 " " Bakelite No Switch.....	.25
"	615 " " Armored.....	.35
"	850 " " With Switch.....	.55
"	800 " " Armored With Switch.....	.90
Simplex.....	990 Armored Appliance Plug, no Switch.....	.75
"	990 DeLuxe Chromplate Plug.....	1.00
Sunbeam.....	Heater Plug.....	1.50
Torrin.....	B-000-3-4-5-6 Safety Control Plug.....	1.00
"	B-080-3-4-5-6 Heat Control Plug.....	1.00
Westinghouse.....	299423 Plug Complete, no Switch.....	.75
"	373656 " " with Switch.....	1.00

PANEL BOARDS OR FUSE CABINETS

BULLDOG FUSENTERS

No.	Description	2 Circ.	4 Circ.	6 Circ.	8 Circ.	12 Circ.
CBS	Surface Black Finish with ins.de shield	\$1.85	\$ 2.35	\$ 3.95	\$ 7.10	\$10.40
BOS	" " Black Finish without shield	1.70	2.20	.....	.....	.....
BF	Flush Luminized Finish	2.50	3.75	5.40	8.80	11.80
BBF	" " Black Finish	2.00	2.75	4.75	.....	.....
BSF	" " Lum. Finish with Toggle Switches	.....	6.65	10.00	13.30	20.00
BSS	" " Lum. Fin' sh with one 30 A. Safetyfuse	.....	20.60	22.00	32.00	35.25
BSS	" " Lum. Finish with one 60 A. Safetyfuse	.....	21.60	22.50	32.35	35.65
BKF	" " Lum. Finish Combined Fusenter & Pull Box	.....	6.65	10.00	15.00	20.00

Combinations—For Resale Prices on all other Fusenter Combinations deduct 17% from Bulldog Co.'s List Prices.

All Steel Equipment Co., FUSE CABS

Style & No.	Description	2 Circ.	4 Circ.	6 Circ.	8 Circ.	12 Circ.
C-702-4-6	Surface Small Type	\$1.75	\$2.45	\$ 3.75	.....	.....
C-902-4-6	Flush Small Type	2.20	2.85	4.95	.....	.....
Series D	Surface Type Sgl. Fuse	.....	.....	.....	.....	.....
3004 to 3074	Not for Branch Switch	3.20	5.10	\$ 7.50	\$10.10	.....
3034 to 3094	Flush Type	.....	.....	.....	.....	.....
4002 to 4012	Surface Type Dbl. Fuse	3.20	5.10	10.10	23.00	36.00
4022 to 4032	Not for Branch Switch.	3.75	9.00	12.10	27.00	45.00
Series DS	Flush Type Dble. Fuse	.....	.....	.....	.....	.....
3300 & 4300	Not for Branch Switch.	.....	.....	.....	.....	.....
3300 & 4300	Fuse Trims for Top Sw.	6.90	9.25	13.80	21.00	.....
3500 & 4500	Flush or Surface-Dble. Fuse Trims for Top Sw.	6.90	9.25	21.00	34.50	70.00

TRUMBULL—CIRCLE T
Residence Panel Boards

Surface or Flush Mounting	2 Circ.	4 Circ.	6 Circ.	8 Circ.	12 Circ.
Single No. 3104 to 3212 Flush Mtg.	.....	.....	.....	.....	.....
Or Fusing 2906 to 2912 Surface Mtg.	\$2.85	\$ 4.60	\$ 9.75	\$11.30	\$13.00
Double No. 3404 to 3412 Flush Mtg.	.....	.....	.....	.....	.....
Or Fusing 2704 to 2712 Surface Mtg.	9.15	12.45	18.25	23.25	26.00

March, 1930

CUTLER-HAMMER (T-V)

Fuse Panels—Surface or Flush Mounting

Circuits	2 Cir.	4 Cir.	6 Cir.
Black Finish Series 4355 & 4356.....	\$ 1.75	\$ 2.40	\$ 4.30
Aluminum Finish Series 4355 & 4356.....	2.25	3.20	4.90
Circuits	8 Cir.	10 Cir.	12 Cir.
Black Finish Series 4355 & 4356.....	\$ 7.60	\$ 9.10	\$ 9.30
Aluminum Finish Series 4355 & 4356.....	7.95	10.00	10.70

SQUARE D Fuse Cabinets

Series 37000 to 39000	2	4	6	8	10	12
Circuit	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
Flush Series 37000 Black.....	\$1.85	\$2.50	\$4.50	\$7.90	\$ 9.60	\$11.25
" " 37000 Aluminum.....	2.35	3.35	5.20	8.30	10.00	11.25
Surface Series 39000 Black.....	1.85	2.50	4.50	7.90	9.60	11.25

NOTE: 2 & 4 Circuit Flush Type are also available with channels for Lath Ends for mounting direct to front side of studding. For these cabinets add to Resale Price each.....\$0.20

WESTINGHOUSE Junior Residence Type

Galvanized or Gray Box	2	4	6	8	10	12
Junior Residence Panels	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
No. K-64012-21 & 64052-61.....	\$1.70	\$2.50	\$ 4.50	\$ 6.65	\$ 7.90	\$10.00
Junior Branch Fuse Attach	.....	.....	.....	.....	.....	.....
No. K-62398 & 62399.....	1.75	2.60	.....	.....	.....	.....
Junior Building Panels for Toggle Switches	.....	.....	.....	.....	.....	.....
No. K-64034-42 & 64074-81.....	6.65	10.00	13.30	16.60	20.00	.....

DIAMOND PANELETTES

Surface Type			Flush Type		
No.	Circuits	Size	No.	Circuits	Size
B-4	4	7x7 x3	F-4	4	8x10 1/4 x3 1/4
S-4	4	8x10 1/4 x3 1/4	F-6	6	8x12 1/4 x3 1/4
S-6	6	8x12 1/4 x3 1/4	F-8	8	8x13 1/4 x3 1/4
S-8	8	8x13 1/4 x3 1/4	F-10	10	8x15 1/4 x3 1/4
S-10	10	8x15 1/4 x3 1/4	F-12	12	10x18 1/4 x3 1/4
S-12	12	10x18 1/4 x3 1/4	.....	.....	.....

Price.....\$2.15 \$2.50 \$3.50 \$4.50 \$5.50 \$7.50

Toggle Flush Type

No. of Circuits.....	4	6	8	10	12
Cat. Number.....	FS-4	FS-6	FS-8	FS-10	FS-12
Price.....	\$6.60	\$9.90	\$14.85	\$17.30	\$19.90

P-SUNDRIES

RUNNING THREAD, PIPE

Price per Foot.....	1/4"	3/8"	1/2"	3/4"
.....	\$.25	\$.30	\$.35	\$.45

SOLDERING PASTE

(Also on Page PL-25.)

Make	2 Oz.	2 Oz.	4 Oz.	Half Pound	One Pound
	Cans	Tubes	Cans	Cans	Cans
Allen.....	\$.30	\$.40	\$.55	\$.90	\$1.50
Burnley.....	.20	.30	.40	.40	.70
Crescent.....	.25	.35	.55	.55	.85
G. E.....	.20	.30	.40	.75	1.30
Highland.....	.40	.70	.90	.90	1.50
Nokorode.....	.20	.35	.55	.75	1.30
Star.....	.25	.35	.55	.55	.85

PAINT & VARNISH

Insulating

Make	Per Pint	Per Quart	Per Half Gallon	Per Gallon
Armalc.....	\$.55	\$1.10	\$1.75	\$3.00
Ajax Varnish No. 25.....	.40	.75	1.35	2.20
Enamelac.....	.40	.75	1.35	2.40
G. P. Black or Clear.....	.45	.80	1.45	2.60
Lustorac.....	.40	.75	1.35	2.20
Voltolec Quick Drying.....	.40	.75	1.35	2.20
W. P. Black Insulating.....	.40	.75	1.35	2.20
P. & B. No. 2 Paint.....	.55	1.00	1.75	3.00
Pothed Compound, per Pound.....	.....	.....	.....	\$ .55

CONDUIT PLUGS

Price Each.....	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
.....	\$.02	\$.03	\$.05	\$.10	\$.16	\$.26

For Pipe Straps, see Page PL-25. For Solder, Sticks, etc., Page PL-25.

PLATES & PLUGS, RECEPTACLE

PLATES

For Flush Receptacles

Brass	.040 Thick	.060 Thick
	Sprayed B. Brass	Sprayed B. Brass
Stand. Plate Single or Duplex.....	\$.15	\$.20
Lift. Cover Pl. Single only.....	.30	.40
Lift. Cov. 2-Gang.....	.50	.60
Combination Switch & Receptacle.....	.....	.55
Disappearing Door Plate Single.....	.....	.70
Duplex.....	.....	1.10
20 & 30 Amp. Brass Plates similar to Hubbell Nos. 7072 & 7114.....	.....	1.50

SUNDRY PLATES

For Receptacles

Bakelite or Composition Plate Single or Duplex Each.....	\$.20
2 Gang Combination Plate Each.....	.40
Guth Porcelain Plate for Single or Duplex Receptacle.....	.30
Mirror Glass Single Plate \$1.00—Duplex \$1.75—3 Gang.....	2.50
Bryant Wood Inlaid One Gang For Single or Duplex Receptacle.....	2.25
De Luxe All Metal.....	.85
Hubbell Bakelite Screwless Plate.....	.60

CAPS & PLUGS For Receptacles

		Blades	Price
10 A. Composition Pony	2 Wire	Parallel	\$.10
10 A. Composition Standard	2 Wire	Parallel	.10
10 A. Genuine Bakelite	2 Wire	Parallel	.20
10 A. Large Size Composition	2 Wire	Parallel	.30
10 A. Large Size Composition	2 Wire	Polariz.	.35
10 A. Diapp. Door Composition	2 Wire		.75
10 A. Diapp. Door Brass Covered			1.00
10 A. Steel Covered Std.	2 Wire	Parallel	.15
10 A. Brass Covered Std.	2 Wire	Parallel	.45
10 A. Cord Grip Composition	2 Wire	Parallel	.30
10 A. Cord Grip Steel Cov.	2 Wire	Parallel	.60
10 A. Knostrain All Composition	2 Wire	Parallel	.45
10 A. Knostrain Brass Cov. Base	2 Wire	Parallel	.85
10 A. Knostrain All Brass Cover	2 Wire	Parallel	.95
20 A. Composition	3 Wire	Polariz.	.05
20 A. Brass Covered	2 Wire	Polariz.	.00
20 A. Brass Covered	3 Wire	Polariz.	1.00
20 A. Compo. Cord Grip	2 Wire	Polariz.	.75
20 A. Compo. Cord Grip	3 Wire	Polariz.	.95
20 A. Steel Cov. Cord Grip	2 Wire	Polariz.	.85
20 A. Steel Cov. Cord Grip	3 Wire	Polariz.	1.20
30 A. Composition	2 Wire	Polariz.	.75
30 A. Composition Hubbell	2 Wire	Polariz.	1.45
30 A. Porcelain	3 Wire	Polariz.	.65
30 A. Compo. Cord Grip	3 Wire	Polariz.	1.65
30 A. Steel Cov. Cord Grip	3 Wire	Polariz.	1.85
30 A. Steel Cov. Cord Grip	3 Wire	Polariz.	2.15

RECEPTACLES, FLUSH

STANDARD RECEPTACLES OR CONVENIENCE OUTLETS

Without Plates		Plates Extra		Price
Shallow	Comp. Side Wired	Single.....		\$25.00
		Duplex.....		35.00
	Porc.	Single.....		25.00
		Duplex.....		35.00
Deep	Comp. Top	Single.....		40.00
		Duplex.....		60.00
	Porc.	Single.....		40.00
		Duplex.....		60.00

SUNDRY RECEPTACLES

Plates Extra Except Where Marked "X"

x For Lift Cover Plate Single.	\$.55
Duplex.	.78
x With Rd. Met. Cvr. For 3 1/4 Box Single.	.90
" " " Duplex.	.45
" " " 4 Duplex.	.25
" " " 4 Duplex.	.50
x With Rd. Brass Plate Small Single.	1.18
Large	1.30
x Edison Screw Base Recp. Single.	.25
Disappearing Door Recp. Single.	.75
Screwless Plate Recp. Single.	1.10
Duplex.	.45
10 Amp. Polariz. For 2 Wire Single.	.65
20 " " " 2 "	1.20
30 " " " 2 "	1.45
30 " " " 3 "	3.00
10 " " " 3 Single.	1.60
20 " " " 3 "	1.95
30 " " " 3 "	4.05
40-60 Amp. Polariz. 3 Wire Single With Ring	5.50

YAXLEY RADIO RECEPTACLES

No.	Connections	Bran	Bakelite
134	Several loud speakers.....	\$2.50	\$2.60
135	Loud speaker.....	1.00	1.10
136	Aerial and ground.....	1.00	1.10
137	Batter (with plug).....	2.50	2.60
138	Electrical only.....	1.00	1.10
142	Double loud speaker.....	1.15	1.85
238	Loud speaker, aerial & ground.....	2.00	2.20
241	Aerial, ground & elect'l.....	2.00	2.20
242	Loud speaker & elect'l.....	2.00	2.20
239	Aerial, ground & battery.....	2.00	2.20
243	Loud speaker, aerial, ground & elect'l.....	2.00	2.20

RECEPTACLE COMBINATIONS

With Plates

Bryant Numbers or Equal

2957-2976	One Porc. Flush Recep.	One Tumb. Switch Tempus or Brass Pl.	\$2.00
2967-2980	One Comp. Recep.	One Tumb. Switch Tempus or Brass Plate.	2.00
117	"	Porc. Flush Recep.	One Ind. Switch-.060 Brass Plate...
121	"	"	One Pilot light .060 Brass Plate.
514	"	Disap. Door Rec.	One Bulls Eye Solid Plate.
518	"	"	Flush Switch Bulls Eye Solid Pl.
467	"	Flush Recep.	One Flush Switch Bulls Eye Solid Plate...
483	Duplex Flush Recep.	Bulls Eye Solid Plate	.....
488	"	Push Switch Bulls Eye Solid Plate	.....
427	Bulls Eye Receptionacle & Lamp no plate.		1.25
Hubbell Switch Tap Combination #7163 & 7164 without Plate.			2.15

RECEPTACLES, PORCELAIN

PULL TYPE OR LAMPHOLDERS

Keyless & Pull Chain for Lighting

No.	G.E.	Description	Price
832		Porcelain Pull Receipt. For 3½ Box 4 Ft. Cord.....	\$.85
833	" "	" " " " 3½ Box 7 In. Chain.....	.85
834	" "	" " " " 3½ Box 4 Ft. Cord.....	.90
836	" "	" " " " 4 Box 7 inch Chain.....	1.00
904 2288	" "	" Ring Receipt with 7' chain-Instr. 4' cord	.55
995 2292	" "	" " " " 7' chain.....	.50
996 2289	" "	" " " " 4 Foot of Cord.....	.55
997 2283	" "	" " " " 7 chain & Insulator.....	.60
998 2287	" "	" " " " 60 chain & 4 Ft. Cord.....	.80
999 2253	" "	" " " " 3 Foot of Chain.....	.80

ALABAX RECEPTACLES AND FIXTURES

P & S, Hubbell, Arrow, G. E., Bryant, Weber

Symbol: Column No. 1—Number of Alabax Fixture.
Column No. 2—Resale Price Standard White Glaze Finish.
Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.
Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Number AL844	White \$4.10	Color \$4.60	Stripe	Number AL1201	White \$3.10	Color \$3.40	Stripe \$3.55
845	4.50	4.95	.....	1202	2.70	3.00	3.20
846	3.85	5.25	\$5.70	1203	3.10	3.40	3.55
847	5.20	5.65	6.10	1273	.60	.70	.80
848	2.30	2.60	2.75	1274	.95	1.10	1.20
849	2.90	3.15	3.35	1275	1.05	1.20	1.30
850	2.90	3.15	3.35	1280	.30	.35	.40
851	1.75	2.00	2.20	1300	3.50	3.75	3.95
852	4.15	4.60	5.05	1301	3.50	3.75	3.95
853	4.50	4.95	5.40	1349	3.25	3.55	3.75
859	1.85	2.60	2.75	1350	3.25	3.55	3.75
863	2.30	2.60	2.75	1351	2.10	2.40	2.55
864	3.45	3.90	4.35	1369	3.45	3.75	3.95
865	3.85	4.25	4.75	1370	3.40	3.65	3.85
866	3.45	3.90	.....	1371	2.30	2.60	2.75
867	3.80	4.30	.....	1449	3.25	3.65	3.85
869	3.10	3.35	3.55	1450	3.35	3.65	3.85
870	3.10	3.35	3.55	1451	2.20	2.50	2.65
871	1.95	2.20	2.40	1469	3.55	3.85	4.00
872	4.15	4.60	5.10	1470	3.55	3.85	4.00
873	4.30	4.95	5.40	1471	2.40	2.65	2.85
875	2.95	3.15	3.35	1475	3.60	3.85	4.05
888	1.15	1.45	1.60	1476	3.60	3.85	4.05
919	2.05	2.30	2.50	2007	1.25	1.50	1.70
920	2.05	2.30	2.50	2008	1.70	1.95	2.15
921	.85	1.15	1.35	2009	1.60	1.90	2.10
922	2.05	2.30	2.50	2010	1.80	2.05	2.25
923	2.30	3.15	3.35	2011	1.05	1.35	1.55
924	2.00	2.75	2.95	2012	1.45	1.70	1.90
929	2.45	2.70	2.80	2013	2.10	2.40	2.55
930	2.45	2.70	2.80	2014	2.25	2.50	2.70
949	2.50	2.75	2.95	2015	1.50	1.80	2.00
950	2.50	2.75	2.95	2371	2.35	2.60	2.80
951	1.35	1.60	1.80	2469	4.00	4.45	4.90
952	2.45	2.70	2.80	2471	3.45	3.90	4.35
960	1.25	1.55	1.75	2669	5.50	5.95	6.40
962	2.50	2.75	2.95	2671	4.95	5.40	5.85
969	2.70	2.95	3.15	2546	3.85	4.35	5.75
970	2.70	3.05	3.25	2547	5.25	5.65	6.10
971	1.55	1.80	2.00	2552	4.10	4.60	5.05
980	1.85	2.10	2.30	2553	4.50	4.95	5.40
981	1.75	2.05	2.20	2564	3.45	3.90	4.35
982	2.10	2.40	2.55	2565	3.85	4.25	4.75
983	2.05	2.30	2.50	2572	3.30	3.60	5.05
984	1.55	1.85	2.05	2573	4.40	4.95	5.40
985	1.50	1.75	1.95	2586	4.50	2.75	2.90
986	2.20	2.60	2.75	9808	2.40	2.85	2.85
990	1.90	2.65	2.85	9906	2.65	2.90	3.10
1'000	2.70	3.00	3.20	9909	2.75	3.00	3.20

The above Prices do not include Glassware or Lamps.

RECEPTACLES, SURFACE

SURFACE RECEPTACLES—Edison Base

Description	All Keyless	Universal	Price
Pony Clear Receptacle Side Screw	No S. H. Groove . . .	50715	\$.18
Round Center	" " " " " " " " " " " "	9171	.20
Standard Clear Side	" " " " " " " " " " " "	9402	.30
" " " " " " " " " " " "	With " " " " " " " " " " " "	4013	.40
Oblong	" " " " " " " " " " " "	58360	.55
Concealed	Round Base " " " " " " " " " " " "	50744	.55
" " " " " " " " " " " "	With Removable Ring " " " " " " " " " " " "	4026	.65
Oblong Receptacle for Wood Molding with S. H. Groove . . .		9445-6	.20
Miniature or Candelabra Small Type . . .	Extended	366-7	.25
Mogul P & S. 520, Arrow 5012, GE 1194, Hubbell 3404, Weber 1422			.85

T-SLOT SURFACE RECEPTACLES

			Price
10 A.	Small T Slot Concealed	2 Wire	\$.45
10 A.	Small T Slot Clear	2 "	".45
10 A.	Small For Wood Molding	2 "	".60
10 A.	Polarized Cleat	2 "	".60
10 A.	Polarized Concealed	2 "	".60
10 A.	Polarized Wood Molding	2 "	".65
10 A.	Fielding Receptacle	2 "	".70
10 A.	Polarized Concealed	2 "	".70
20 A.	Polarized Cleat	2 "	".70
20 A.	Polarized Concealed	2 "	".70
20 A.	Polarized Wood Molding	2 "	".80
20 A.	Polarized Concealed	3 "	1.15
30 A.	Polarized Composition	3 "	1.35
40 A.	Polarized Porcelain	3 "	1.20
40 A.	Polarized Composition	3 "	1.85
40 A.	Polarized Engrain	3 Pole	1.35

BOX RECEPTACLES

T Slot Type

10 Amp.	Receptacle Standard.....	\$.50
10 Amp.	" " .....	.90
10 Amp.	" " with Covered Ter....	.55
20 Amp.	" " Polarized.....	.85
10 Amp. 3/4"	Porcelain Single.....	.45
10 Amp. 3/4"	" Duplex.....	.55
10 Amp. 4"	" Single.....	.60
10 "	" Duplex.....	.70

Edison Base Type

With Metal Cover	3 3/4" Box	.....	\$ .25
"	"	"	.30
"	"	Weatherproof	.30
"	"	"	.35
All Porcelain for 3 3/4" Box	Keyless	.....	.40
			.50
All Porcelain Pull Chain for Boxes			1.90
Brass Covered	Keyless for 3 3/4" x 4" Box		1.00
Brass Covered	Pull Chain for 3 3/4" x 4" Box		2.00

COMPLETE STANDARD SOCKETS (Continued)

BODIES For Above Sockets

Edison Base		Price
Shallow Porcelain Screw Terminals.....		\$.30
" " Concealed Cap.....		.35
" " with 6" Lead Wire.....		.40
" " with Shade Holder Groove.....		.40
" " One Piece Screw Terminal.....		.30
Deep Porcelain with Screw Terminals.....		.30
" " Concealed Cap.....		.45
" " with 6" Lead Wire.....		.40
Intermediate Base		Price
Porcelain Cleat Receptacles.....		\$.30
" " 2 Screw.....		.30
" " with Spring Stud.....		.30
" " Removable Ring.....		.30

	Key	Keyless	Pull	Push Thru
Standard Brass Shell Body.....	\$.30	\$.17	\$.30	\$.25
Standard Electrolier Shell Body Only.....	.22	.20	.33	.26
Brass Shell Threaded Catch Body.....	.40	.35	.55
Cold Molded Composition Body.....	.40	.35
All Porcelain Body Only.....	.40	.35	.80	.60
Lock Type Brass Shell Body Only.....	.95	.90	1.20	.95

BASES Only For Brass and Porcelain Sockets

STANDARD ROSETTES—Fusible		Price
Cleat—1 Piece Junior Fusible Rosette.....		\$.18
" " " " " " " " " " " " " " " "		.26
" " " " " " " " " " " " " " " "	Fusible .....	.31
Concealed—2 Piece Concealed Fusible Rosette.....		.26
" " " " " " " " " " " " " " " "	Fusible .....	.26
" " " " " " " " " " " " " " " "	For Wood Moulding—Fusible.....	.26
" " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	.30
	Fusible.....	.30
Box Type—1 Piece Rosette or Box Cover Fusible.....		
	3 1/4" Box With Brass Terminals.....	\$.50
	" " " " " " " " " " " " " " " "	.55
" " " " " " " " " " " " " " " "	1" Brass Condulet for Boxes.....	1.20
	For Special Conduit Rosettes—See Pages PL-10, 11 and 12.	

BRASS BAYONET SOCKETS

		Copperweld	Galvanized Not Wired	Galvanized Wired
	Size	Price	Price	Price
1/2"	Foot.....	\$.65	\$.35	.....
3/8"	" .....	.75	.40	.....
1/2"	"	1.40	.55	\$.70
5/8"	"	1.85	.60	.75
1"	"	2.10	.....	.....
1 1/8"	"	2.60	.....	.....
1 1/2"	"	3.05	.....	.....
1 3/4"	"	3.40	.90	1.05
2"	"	3.15	1.15	.....
2 1/2"	"	3.85	.....	.....
3"	"	2.80	.....	.....
3 1/2"	"	4.40	.....	.....
4"	"	5.35	.....	.....

Sometimes Called Wall Sockets or Receptacles			
Keyless Brass Shell with Small Conc.	or Slotted Base.....	50717 & 18	\$.40
" " "	Covered Base.....	60019	.65
" " "	Large	60020	.90
Key	Small Concealed Base.....	9184	.65
" " "	Covered	60018	.65
" " "	with Removable Ring.....	50746 & 7	.85

Number of Rawplug	Drill Hole	For Screw No.	Price Each Any Length
6	5/8	6-7	\$.02
8	5/8	8-9	.03
10	5/8	10-11	.04
12	5/8	12	.05
14	5/8	14	.06
16	5/8	16-18	.08
20	5/8	20-22	.12

BRASS TWIN SOCKETS or Current Taps

Size of Lag Screw	Size Drill Hole	Size of Rawlplug	Price Each				
			Length				
			1 1/4"	2"	2 1/2"	3"	3 1/2"
			\$.13	\$.15	\$.18	\$.20	...
			.14	.17	.20	.23	...
		20	.23	.26	.....
		27	.30	.....

Pull Chain	Screw Cap Side T Slot.....	Price
Pull Chain	1/4 Cap Side T Slot.....	\$1.35
Pull Chain	Screw Cap Adaptor Not T Slot.....	1.10
Pull Chain	1/4 Cap Twin Socket.....	1.10
Pull Chain	1/4 Cap Twin Socket.....	1.75
Keyless 1/4	Cap Side T Slot.....	1.75
Key 1/4	Cap Side T Slot.....	.80

WEATHERPROOF SOCKETS

COMPLETE STANDARD SOCKETS									
Complete With	Pend.	3/4	3/4	3/4	3/4	3/4	3/4	3/4	Pend.
	Cap	Brass	Brass	Brass	Brass	Brass	Brass	Brass	Cor Gri
	Standard	Brass Shell	Brass Shell	Brass Shell	Brass Shell	Brass Shell	Brass Shell	Brass Shell	
Key	.25	.25	.35	.45	.50	.55	.60	.65	.75
Keyless	.23	.23	.30	.40	.47	.53	.57	.63	.75
Pull	.35	.35	.45	.55	.60	.65	.70	.75	.85
Push	.30	.30	.40	.50	.60	.60	.65	.70	.85
Electroliner Brass Shell									
Key	.30	.30	.40	.50	.55	.60	.65	.70	.85
Keyless	.25	.25	.35	.45	.50	.55	.60	.65	.75
Pull	.40	.40	.50	.60	.65	.70	.75	.80	.95
Push	.35	.30	.40	.50	.55	.60	.65	.70	.85
Leveller Pull									
Pull	.50	.50	.60	.....	.....	.....	.....	.....	.....
Threaded Brass Sockets									
Key	.45	.45	.55	.....	.....	.....	.....	.....	.85
Keyless	.40	.40	.50	.....	.....	.....	.....	.....	.85
Pull	.60	.60	.70	.....	.....	.....	.....	.....	.95
Push	.60	.60	.70	.....	.....	.....	.....	.....	.95
Cold Molded									
Key	.50	.65	.70	.....	.90	.....	1.35	.....	.75
Keyless	.45	.60	.65	.....	.85	.....	1.30	.....	.75
All Porcelain Sockets									
Key	.45	.45	.70	1.00	.90	.....	1.25	.75	.75
Keyless	.50	.60	.65	.85	.75	.....	1.20	.65	.75
Pull	.90	1.10	1.10	1.60	1.20	.....	1.65	1.20	1.25
Push	.65	.80	.80	1.10	.95	.....	1.40	.95	.95
Lock Type Brass Shell									
Key	1.00	1.00	1.10	1.20	1.25	1.30	1.35	1.40	1.45
Keyless	1.00	1.00	1.05	1.20	1.20	1.25	1.30	1.35	1.40
Pull	1.25	1.25	1.35	1.45	1.50	1.55	1.60	1.65	1.70
Push	1.00	1.00	1.10	1.20	1.25	1.30	1.35	1.40	1.45

CANDLE SOCKETS					
Stand.	Base Keyless Candle Socket with Rigid or Adjust. Hickey.....	\$.25			
" "	" Push Candle Socket with Rigid or Adjust. Hickey.....	.85			
" "	" Pull Candle Socket with Rigid or Adjust. Hickey.....	.90			
Leweller Bracket	Candle Sockets Lever Brass No. 103 to 130.....	.75			
" " "	" " Porcelain No. 121-122.....	.75			
" " "	" " Fibre No. 133-134.....	.70			
" " "	" " Brass Lever No. 127.....	.70			
Intermediate Base	Pull Candle Socket with Paper Jacket.....	1.20			
Intermediate Base	Keyless Candle Socket Porcelain.....	.25			
Candelabra Type	Keyless Socket.....	.25			
Candelabra Type	Pull Chain Socket.....	1.30			

	Pend.	$\frac{1}{4}$ Brass	$\frac{3}{4}$ Brass	$\frac{1}{4}$ Brass	$\frac{3}{4}$ Brass	$\frac{1}{4}$ Angle	$\frac{3}{4}$ Angle	Pend. Copper
Standard Brass Cap	\$.10	.10	.20	.30	.40	.40	.45	.80
Electroliter	.10	.10	.20	.30	....	.40	.45	....
Brass Threaded	.10	.10	.20	....	....	....	....	.30
Cold Molded	.15	.30	.35	....	.50	....	.90	.30
All Porcelain	.15	.30	.35	.55	.60	....	.90	....

CANDELABRA OR MINIATURE SOCKETS		Price
Keyless Porcelain Male	Female	\$.34
Brass Shell	Cap	\$.34
Key		\$.34
Pull		1.22
Candle Type Keyless		1.22
Pull		1.22

DIM-A-LITE & LO-LITE SOCKETS					
No.....	23	23A	33	34	91
Price.....	\$1.00	\$1.25	\$1.25	\$1.25	\$1.50

PORCELAIN REFLECTOR & HUSK Sockets—Keyless

PORCELAIN REFLECTOR & HUSK Sockets—Keyless

One Piece with Threaded Cap.....	Priced
One Piece with Angle Cap Threaded.....	\$.45
Two Piece Body Only.....	.60
Two Piece with $\frac{1}{4}$ Brass Cap.....	.70
Two Piece with $\frac{1}{2}$ Brass Cap.....	.80
Two Piece with Pendant Cord Grip.....	.70

INTERMEDIATE BASE Sockets

Key Socket 1/4 Cap.....	Price \$.65	Molded Socket Pigtail Weather- proof.....	\$.30
Keyless Socket 1/4 Cap.....	.60	Candle Pull Paper Jacket.....	1.45
Pull Socket 1/4 Cap.....	1.70	Candle Keyless Porcelain.....	.35

SOCKET ACCESSORIES

Adaptors for Socks—See Pages PL-4 and 18.	
Acorn Hubbell 5919-0982-7004—or Similar—Each	\$.10
Acorn Luminous Hubbell 7015 Bryant 750 GE 860—or Similar—Each	.30
Aluminum Hubbell 5919-0982-7004—or Similar—Each	.10
Chain for Full Sockets—Per Foot	.02
Cord for Devices—Light Type—Per Foot	.02
Cord for Devices—Heavy Type—Per Foot	.02
Handles for Sockets—Bryant 1240—or Similar	.01
Splicing Links—Not Insulated for Chain—Each	.01
Splicing Links Insulated for Chain—Each	.11

SOCKETS, HEAVY DUTY

MOGUL SOCKETS

Arrow, Bryant, G. E., Hubbell, H. & H., P. & S., Weber

	Without Yoke or Cap	With $\frac{3}{8}$ " or $\frac{1}{2}$ " Iron Yoke	With $\frac{3}{8}$ " or $\frac{1}{2}$ " Alum. Cap
Porcelain One Piece Socket Mogul.....	.65	.80	.95
Two " " " "	.80	.95	1.10
One " " with Lead Wires..	.80	.95	1.10
Brass Shell Keyless Mogul Socket $\frac{3}{8}$ " or $\frac{1}{2}$ " Brass Cap.....			\$2.30
" " Shadeholder.....			2.25

HEAVY DUTY WEATHERPROOF SOCKETS

Copper or Aluminum

2	Piece Keyless	1/4 or 1/2 Cap.	.....	\$ .80
2	"	with Cord Grip	.....	.80
1	"	1/4 or 1/2 Cap.	.....	.60
1	"	with Cord Grip	.....	.60
Shadeholders for above sockets.....				
2 1/4	Aluminum or Copper Extra	.....		.30
3 1/4	"	.....		.50
4	"	.....		.70

Sockets, Heavy Duty

Price Each

Benco Keyless Socket	with Clamp Ring #4700 to 4703 Medium Base	\$1.25
"	" "without" #4712 to 4715 "	1.10
" Pull	" "with" #4706 to 4709 "	2.00
Benco Keyless Socket	Copper or Alum. #4200-1-4-5 & 4335 & 7.	.80
"	Brass #4202-4203-4336	.90
" Pull	#4207-8 4225-36 4236-37 Brass, Copper or Alum.	1.50
" Mogul	Copper Clad #4210-4297	2.25
Benco Threaded Holders On		2.35
Polsko Alum. Weatherprf	#4215 & 4217	3.60
Copper	#4370-72 & 73.	.40
Brushed Brass	#4377-79 & 80.	.60

th	With
14	16
14	16

	Without Yoke	% or ½ Iron Yoke	% or ½ Alum. Yoke
One Piece Socket with Lamp Grip.....	\$1.00	\$1.15	\$1.50
Two Piece Socket with Lamp Grip.....	1.20	1.45	1.70

With Type X or XR Fitting

Medium Base Keyless	Tapped 1/4" - 1/2" M. No. 4650-51 & 65.	\$1.20
"	Self-Locking 1/4" - 1/2" M. No. 4528-29-30-32-33.	1.60
"	" Shock Absorb. 1/4" - 1/2" M. No. 4676-77-78-80-81.	1.45
"	" Shock Absorb. Self Lock No. 4543-49-50-52-53.	2.00
"	Pull Chain No. 4534-35 & 4660-61-67.	2.10
Mogul Base Keyless	Shock Absorbing No. 4670-71-72.	2.00
"	Not Shock Absorbing No. 4586-57 4666.	1.65
If X or XR Fitting	not supplied on above sockets deduct.	.45

Plates & Boxes Extra

Square Handle Porcelain Cup—Sgl. Pole.....	\$.35
" " " " Dble. Pole.....	1.00
" " " " 3 Way.....	.50
Composition Cup—Sgl. Pole.....	3.00
" " " " Dble. Pole.....	.85
" " " " 3 Way.....	3.50
20 Amp. Sgle. Pole.....	3.35
20 Amp. Dble. Pole.....	1.35
Round Handle Porcelain Cup—Sgl.....	1.50
" " " " Dble.....	.35
" " " " 3 Way.....	1.00
" " " " 3 Pole.....	2.00

New Circuit Type

Twin-2 Sgle. Pole Switches . . .	\$1.35
Twin-1 Sgle. Three Way . . .	1.50
Twin-2 Sgle. 3 Way Switches . . .	2.10
Triplet-3 Sgle. Pole Switches . . .	1.75
Triplet-2 Sgle. & 1-2 Way Switches . . .	1.90
Lock Type Porcelain Cup—Sgl. Pole	
• • • • •	
• • • • •	
• • • • •	
• • • • •	
• • • • •	
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• • • • •	
• • • • •	
• • • • •	
EXTRAS—For Luminous Tip add for Each Handle40
For Glo Guide Handle Switches add for Each . . .	1.00

Shambles Switch & One Flush Room with Plaster Lined B

Comb. One Tumbler Switch & One Plug Recep. with Plate Less Box.	\$2.00
Comb. One Tumbler Switch & One Bulls Eye with Plate Less Box.	3.00
Comb. Switch Tap & Recep. Hubbell 7163-64 Less Plate and Box.	1.60
Comb. Switch Tap & Pilot Light Hubbell 7180-81 Less Plate and Box.	2.65

	1	2	3	4
Stamped Brass Sprayed Finish .040 Thick.....	\$.15	\$.30	\$.45	\$1.35
" " Brush Brass .040 ".....	..20	..40	..60	1.50
" " Sprayed .060 ".....	..20	..40	..60	1.70
" " Brush Brass .060 ".....	..30	..60	..90	1.80
Bakelite or Composition Molded.....	..20	..40	..60	..80
Twin & Triple Struck Up Plates.....	..20	..30	..35	..40
Solid Brass.....	..50	..50	..50	..50
Hubbell Bakelite Screwless Plates.....	..60	1.10	1.60	.....
Bryant DeLuxe Wood Inlaid any Finish.....	2.25	3.90	6.40	.....
All Metal.....	..85	1.50	2.10	.....
Guth Porcelain Enamel Plates.....	..30	..65	1.00	.....
Guth Mirror Glass Plates.....	1.00	1.25	2.25	.....
Blank Plate .040 Brush Brass Finish.....	..30	..60	..90	.....
Telephone Plate .040 Brush Brass Finish.....	..35	..45	.....	.....

Plate & Boxes Extra

Standard Shallow Type Porcelain Cup—Single Pole.....	\$0.35
" " " " Double "	1.50
" " " " 3 Way	3.00
Deep Type Porcelain Cup—Single Pole.....	.70
" " " " Double "	1.10
" " " " 3 Way	3.00
Special High Grade —Single Pole.....	1.10
" " " " Double "	1.80
" " " " 3 Way	3.00
Lock Type Porcelain Cup—Single Pole.....	1.40
" " " " Double "	1.80
" " " " 3 Way	3.70
Electrolite Non-Indicating.....	1.90
Indicating.....	1.90
Extra for Luminous Button Add Per Switch.....	

With Plates

Bryant	117	D. P. Iucat. Switch	Flush Receptacle & .060 Plate	\$2.00
	413	One Push Switch-Bulls Eye and Solid Plate		4.00
	518	Disap. Door Recp. Bulls Eye—Solid Plate		7.50
	465	D. P. Flush Switch & Pilot Lamp .060 Plate		3.00
	467	Flush Switch—Flush Recp.—Bulls Eye—Solid Plate		6.00
	538	Duplex		.80
H & H	3752	Bulls Eye—Solid Plate		4.00
	3759	Duplex Recep. Solid Plate		5.50
	3810	Single		.80

Price

		Price			
		1	2	3	4
Description		Gang	Gang	Gang	Gang
Stamped Brass	Sprayed Finish .040 Thick...	\$.15	\$.30	\$.45	\$1.35
"	" Brush Brass .040 .....	.20	.40	.60	1.85
"	" Sprayed .060 .....	.20	.40	.60	1.70
"	" Brush Brass .060 .....	.30	.60	.90	1.85
Bakelite or Composition	.....	.20	.40	.60	.80
Bryant DeLuxe Plates	Wood Inlaid.....	2.25	3.90	6.40	.....
	All Metal.....	.85	1.50	2.10	.....
Guth Porcelain Plates	.....	.30	.65	1.00	.....
Glass Mirror Plates	.....	1.00	1.75	2.50	3.25
Blank Plate .040 Brush Brass Finish	.....	.30	.60	.90	.....
Telephone .040 .....		.35	.45	.....	.....
Combination Dish & Receptacle Plates	.060 Brass.....	.....	.....	.....	.....
"	" .060 Molded.....	.....	.....	.....	.40
"	" Guth Enameled.....	.....	.....	.....	.65
"	" Mirror Glass.....	.....	.....	.....	1.75

METAL COVERED SNAP SWITCHES

Poles	Volts	Type	Size	Amp.	Amp.	20	30
Single	125	Non-Indicating.....	Pony	\$.35	....	....	....
	"	Indicating.....	"	.40	....	....	....
	"	Non-Indicating.....	Standard	.55	\$.75	1.45	\$2.20
	"	Indicating.....	"	.85	2.60	2.20	2.35
Double	250	Non-Indicating.....	"	1.00	1.05	2.20	2.65
	"	Indicating.....	"	1.00	1.20	2.35	2.80
Triple	"	Non-Indicating.....	"	"	2.95	3.75	4.50
	"	Indicating.....	"	"	3.10	3.90	4.65
4-Way	125	Non-Indicating.....	"	.90	1.25	2.35	2.80
3-Way	250	Non-Indicating.....	"	1.35	2.95	2.20	2.35
Electrolux	"	Non-Indicat. 110V.....	"	1.40	1.40	2.20	....
	"	Indicating 110V.....	"	1.55	1.55	2.35	....

ALL PORCELAIN SNAP SWITCHES

Poles	Voits	Type	Size	Amp.	10	20	30
Single	125	Non-Indicating.....	Pony	\$.50	.....	.....	.....
	125	Indicating.....		.85			
	125	Non-Indicating.....	Standard	.85	\$.00	\$1.65	\$2.40
	125	Indicating.....	"	.80	1.00	2.50	3.00
	250	Non-Indicating.....	"	.75	1.00	2.45	3.85
	250	Indicating.....	"	1.10	1.35	2.60	3.00
3-Way	125	Non-Indicating.....	"	.95	1.35	2.60	3.00
4-Way	125	Non-Indicating.....	"	1.50	3.00	.....	.....
Electrolier			"	1.55	1.55	.....	.....
		Indicating.....	"	1.70	1.70	.....	.....

TUMBLER OR TOGGLE SNAP SWITCHES—Metal

	Metal Single Pole	Double Pole	3 Point	4 Point
125-250 Volt				
5 Amp. Closed or Slott. Base.....	\$.35	\$.85	\$.80	
10	.80	1.10	1.25	\$1.40

SNAP SWITCHES FOR WOOD MOLD, CONDULETS, ETC.

	Metal Covered		All Porcelain	
	5 Amp. 125 Volts	Indicating	Non-Indicating	Indicating
Single Pole.....	\$.65	\$.60	\$.75	\$.70
Double ".....	1.10	1.05	1.20	1.15
Three Point.....	1.10	1.00	1.20	1.10
Electrolier.....	1.40	1.40	1.50	1.40

PARTS FOR SNAP SWITCHES

Handles—Standard Type Each \$.12—Ratchet Type.....	.20
Bases—Porcelain 5 Amp. \$.12—10 Amp. \$.15—20 Amp.....	.30
Covers—10 Amp & Under Metal \$.15—Porcelain.....	.30
Over 10 Amp.	.30

**SWITCHES, PULL CORD, CHAIN,
CANOPY, LEVOLIER, ETC.**

PULL CORD SWITCHES—BODIES ONLY

	Price
Ceiling—Bottom Pull.....	\$0.80
Wall—Side Pull.....	.95
Rosette—Side Pull.....	.95
Fixture—Bottom Pull.....	1.25
3/4" Brass Cap.....	.10
3/4" Brass Cap.....	.10
3/4" Brass Cap.....	.30
Addition for Caps and Bases	.35
Small Slotted or Concealed Base.....	.35
Large Concealed Base.....	.40
Wall Moulding.....	.40
Small Box Base Brass Covered.....	.50
3 1/2" Box Base Brass Covered.....	.60
4" Box Base Brass Covered.....	1.10
3 1/2" Box Cover with Ring.....	.20
4" Box Cover with Ring.....	.25

HEAVY DUTY PULL CORD SWITCHES, METAL COVER
With 8 Feet Heavy Cord

S. P. with Small Porc. Slotted or Solid B.	\$1.61
D. P. with Small Porc. Slotted or Solid B.	1.90
3 & 4 Point with Small Porc. Slotted or Solid B.	1.90

These switches can be furnished with side or bottom open, at same price.

The New and Enlarged
HADDON HALL
in the
WORLD'S PLAY GROUND
Is Equipped with
"Central White" Conduit



Here is a new addition to Atlantic City's growing skyline that is a real credit to the valued reputation of the architects, Rankin and Kellogg, Stewart A. Jellett Company the Electrical Engineers; and Hatzel and Buehler, the electrical contractors who collaborated in its construction.

Every detail of its construction was selected with the greatest care including "Central White" Conduit—the electro-galvanized conduit with a national reputation for its lasting dependability and easy working qualities.

This hotel is but one of the many prominent buildings in Atlantic City equipped with Central Conduit and illustrates the wide preference among many of the country's foremost architects and engineers for this superior conduit.

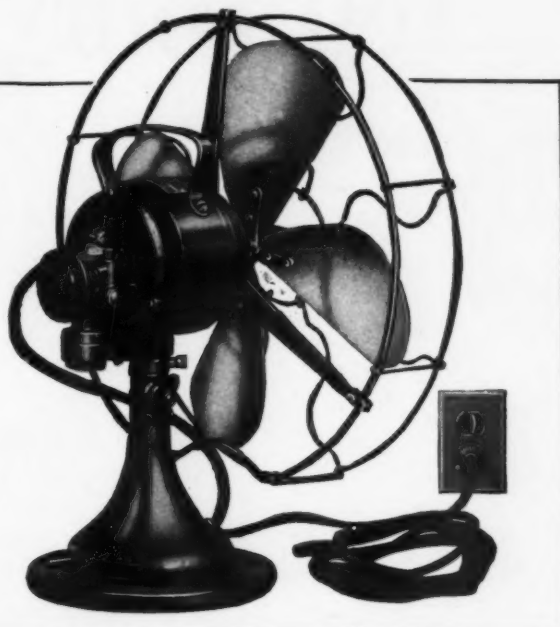
CENTRAL TUBE COMPANY

PITTSBURGH

General Offices: First National Bank Bldg., Pittsburgh

Plant at Ambridge, Pa.

THEY KEEP A-RUNNING



Century 12-in. 3-speed Portable Oscillating Fan A. C. and D. C.

Easy to Handle and Control

The Century Fan Line Includes:

Portable... 9-inch and 10-inch stationary, 1-speed, Induction-type A. C.
 Portable... 9-inch oscillating, 1-speed, Induction-type A. C.
 Portable... 9-inch oscillating, 3-speed, Series-wound D. C.
 Portable... 10-inch oscillating, 2-speed, Induction-type A. C., and Series-wound D. C.
 Portable... 12-inch and 16-inch oscillating, 3-speed, Induction-type A. C., and Series-wound D. C.
 Ceiling... 36-inch sweep, 4-blade, 3-speed, Induction-type A. C.
 Ceiling... 60-inch sweep, 4-blade, 3-speed, Induction-type A. C., and Series-wound D. C.
 Ventilator... 12-inch, Induction-type, A. C., with or without 3-speed switch in wall control box.
 Ventilator... 16-inch, 3-speed, Induction-type A. C., and Series-wound D. C.

The convenience with which Century Oscillating Fans may be handled and controlled makes a strong appeal to the user... Century Fans have the lightest weight consistent with stability. They can be easily carried by a handle secured to the top of the motor frame. The oscillating movement is controlled by a small lever. The fan may be tilted to any desired position, and the direction of the breeze may be changed without lifting the fan. Multi-speed fans have a switch conveniently located in the stand. Sell the convenience of Century Fans, plus their ability to "Keep a-Running" and provide continuous comfort.

Century Fans Build Business

CENTURY ELECTRIC COMPANY
 1806 PINE ST. • ST. LOUIS, MO.

40 Fan Stock Points in the United States and More Than 50 Outside Thereof

SINGLE PHASE,
 THREE PHASE,
 AND DIRECT
 CURRENT MOTORS

Century
FANS

MOTOR GENERATOR SETS, ROTARY CONVERTORS, FANS AND VENTILATORS

FOR MORE THAN 26 YEARS AT ST. LOUIS⁴⁵⁴

Tell your prospects ... *you're in Business*



VENTILATING Contractors have for years been trying to tell their prospects they are in business. Some have succeeded to a large degree. Others have barely made an impression on the market. Now every Ventilating Contractor can tell his prospects he is in business, easily and economically. Of course you want to know how, and the American Blower Blue Book gives all the details. So why not fill in the coupon below and let us

send you this popular book—free and without obligation. Describes in detail American Blower's new, localized, individual mailing folders for Contractor Dealers—folders written, printed and mailed for the dealer—folders that feature the dealer's service and the dealer's products. It has numerous other selling and merchandising ideas that you cannot afford to be without. Fill in the coupon today—assure yourself an early delivery of this book.

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MANUFACTURERS OF ALL TYPES OF AIR

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AMERICAN BLOWER CORPORATION, 6000 Russell Street, Detroit, Mich.

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What **\$123⁰⁰** Buys in
BLACK & DECKER
ELECTRIC TOOLS

THESE are 4 tools that are needed in every shop where there are holes to be drilled or grinding, buffing or polishing to be done. They are powerful, sturdy, dependable and are offered at an unusual price for tools of such quality. Every shop, regardless of its size, needs them and can afford them.

This entire outfit costs but little more than the Half-Inch Drill alone a few years ago.

You can secure these tools from your own Jobber at this price, if you place your order now.

THE BLACK & DECKER MFG. CO.

Slough, Bucks., England

TOWSON, MARYLAND

Toronto, Ontario, Canada



“Injuns! Take these reins!” Commanded Buffalo Bill

He and Mrs. Cody had ridden too far from town. The careening buggy raced toward Salina with the Indians galloping their ponies to cut them off. In Cody's hand was his Colt; the muzzle pointed to his wife's head. "It's better for a woman to be dead, Lou, than to be in their hands. I want to be ready so that if they get me I can pull the trigger before I fall."

Rescue came just in time. Buffalo Bill did not have to pull the trigger, but during that harrowing race his Colt was ready to protect the one thing he held dearest in life.

What stories those old Colts could speak if only they could talk, but speech for

them was limited to the sharp crack as a Colt leaped in an emergency.

The same company that gave protection when the West was young, is today giving industrial protection through the Noark line of safety switches and meter protection devices. Methods of fine mechanical precision that have made the Colt known around the world are today fashioning Noark devices—for Colt has always specialized on the manufacture of things mechanical. That

is why Colt selected Noark seven years ago to become one of its products and receive the skill of manufacture so typical of whatever Colt attempts.

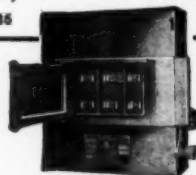
COLT
NOARK

COLT'S PATENT FIRE ARMS MFG. CO.,
Established 1836

Electrical Division, HARTFORD, CONN., U.S.A.
Electrical Division 1886

“ELECTRICAL MEN, TOO,

Immediate and hearty acceptance is a vote of confidence that has been extended by the industry to every new product that has been announced by Colt. And now the new Quadbreak Type “A” Safety switch is winning



HAVE CONFIDENCE IN NOARK”

favor everywhere. Have you seen it? Send for catalog “G” and detailed description. The “Rampant Colt,” an interesting publication, will be mailed on request.

WHEELER LIGHTING

KNOWN TO GENERATIONS OF INDUSTRY



From the days of the first incandescent lamp, thru the long years of

industrial development and change, Wheeler Lighting has served consistently, resourcefully and well. Succeeding generations have found in the many different types of Wheeler Reflectors and in their scientific design, the solution to every conceivable problem in industrial illumination.

The result has been a nation-wide preference for Wheeler products among Industrial and Electrical Engineers, Architects, Contractors, and those specifying lighting equipment—a preference that has been strengthened with time, and has definitely established Wheeler as the foremost name in the present-day world of industrial lighting.



WHEELER REFLECTOR COMPANY, BOSTON, MASS.

NEW YORK



ATLANTA



CLEVELAND

Sales Offices: St. Louis, Indianapolis, Los Angeles, San Francisco, Seattle. In Canada: Canadian General Electric Co., Ltd.

NON-METER TEST TYPE

Number	Amps.	Pole	Fused	Neutral	Description	Price
26311	30	3	2 Plug	Solid	Plug Type Fuse Dead.....	\$ 2.40
26351	30	3	2 Cart.	"	Cart. Type Fuse Dead.....	3.75
SK-615	30	3	2 Plug	Switched	Plug Type Fuse Dead.....	4.30
SK-659	30	3	2 Cart.	"	Cart. Type Fuse Dead.....	4.30
SK-660	60	3	2 "	"	Cart. Type Fuse Dead.....	11.70
SK-674	100	3	2 "	"	Cart. Type Fuse Dead.....	19.20

"Square D" Accessible Main Fuse Type

METER TEST TYPE				
Number	Amp.	Pole	Fused	Price
30391	30	3	3 Cart.....	\$ 9.00
30392	60	3	3 "	20.35
30393	100	3	3 "	30.00

NON METER TEST			Fused	Price
Number	Amp.	Pole	Cart.....	
10391	30	3	3 ".....	\$ 9.30
10392	60	3	3 ".....	18.60
10393	100	3	3 ".....	28.25

"Square D" Sealable Main Fuses

METER TEST TYPE					Price
Number	Amp.	Pole	Fused 3 Cart.		
36351	30	3	3	.....	\$ 9.20
36352	60	3	3	.....	17.60
36393	100	3	3	.....	26.50

NON METER TEST				
Number	Amp.	Pole	Fused	Price
SK-671	30	3	3 Cart.....	\$ 4.30
SK-672	60	3	3 "	11.70
SK-673	100	3	3 "	19.20

FITTINGS FOR STANDARDIZED SWITCHES

End Walls for 30 Amp. Switches.....	\$.30
" " " 60 & 100 Amp. Switches.....	.80
Trough Closing Plates No. 20533 & 34.....	10
Connecting Trough No. 20733—3 1/2" Long.....	40
" " " 20738—8 1/2".....	40
Universal End Wall & Shutters.....	30
" " " Meter Shutter only No. 24358.....	10

TYPE C

"Square D" Single Throw, Industrial Switches Quick Break Only

250V. DC & 500V. AC Fused & Unfused		
Amps.	2 Pole	3 Pole
30	#85251 \$ 3.20	#85351 \$ 5.20
60	#62652 \$ 8.20	#63652 10.00
60	Solid Neutral #74312 9.10	
100	#45253 \$12.75	#45353 15.00
100	Solid Neutral #74312 14.60	
200	#42654 \$20.00	#43654 26.40
200	Solid Neutral #74314 22.75	

TYPE A

"Square D", Industrial Quick Make & Break, Single Throw

250 Volts Fusible				250-500 & 600 Volts Unfusible			
Amps.	2 Pole	3 Pole		Amps.	2 Pole	3 Pole	
x30	#80251 \$10.90	#80351 \$12.75		x30-60	#81252 \$ 9.55	#81352 \$11.40	
60	#86252 13.65	#86352 17.30		30-60	#81242 11.85	#81342 14.60	
100	#86253 20.90	#86353 22.30		100	#81243 20.00	#81343 21.85	
200	#86254 32.75	#86354 36.40		200	#81244 25.50	#81344 30.95	
r60 Amp. Sw. with 30 Amp. Snacing				(x=250 Volts only)			

30 AMP. TYPE C

"Square D", Industrial, Single Throw

250 Volts		Description		Single Throw	
No.	2 Pole			No.	3 Pole
83251	\$3.20	Quick Make & Break		83351	\$ 5.20
91251	2.65	Not Quick Break		91351	4.00
x90251	7.75	Quick Break Only		x90351	10.00
(x 60 Amp. Switches with 30 Amp. Clips)					

MOTOR STARTERS

"Square D", Quick Make & Break, Single Throw

[illegible]

TYPE "C" SWITCHES

**Cutler-Hammer (T-V) Single Throw Industrial Type
Series 4131**

250 Volts DC or AC Fusible				500-600 Volts AC Fusible			
Amps	2 Pole	3 Pole		Amps	2 Pole	3 Pole	
30	4131H2	3.15	4131H3	5.15	30	4131H7	8.55
60	4131H3	8.10	4131H4	9.90	60	4131H8	9.90
100	4131H4	12.60	4131H5	15.30	100	4131H9	14.40
200	4131H5	19.80	4131H6	26.10	200	4131H10	29.80
400	4131H6	48.60	4131H7	66.60	400	4131H11	64.80

125-250 Volt Solid Neut. Fusible				Non-Fusible Type 250 DC 500-600 AC			
Amps	3 Pole	4 Pole		Amps	2 Pole	3 Pole	
30	4131H39	\$ 6.70	4131H44 \$ 8.10	x30	4131H54 \$ 3.15	4131H58 \$ 4.05	
60	4131H40	9.00	4131H45 11.25	60	4131H55 8.10	4131H59 8.55	
100	4131H41	14.40	4131H46 20.25	100	4131H56 10.80	4131H60 12.15	
200	4131H42	22.50	4131H47 31.50	200	4131H57 18.90	4131H61 22.50	
400	4131H43	63.00	4131H48 81.00	x30	Amp 250 Volts Only		

ENTRANCE SWITCHES, LIGHT TYPE Cutler-Hammer (T-V)

		2 Pole		3 Pole	
Amps	Description	Numbers	Price	Numbers	Price
30	For Plug Fuses.....	4141H1&2	\$ 1.65	4141H3-4	\$ 2.00
30	2 Blades - 2 Fuses.....	4141H5		4141H5	2.25
30	For Cartridge Fuses.....	4141H6&8	1.85	4141H9-10	3.55
30	For Cartridge Fuses.....	4141H7	.70		
30	For 2 Cart. Blades-2 Fuses.....			4141H11	3.25
30	Non-Fusible.....	4141H23	2.35	4141H24	4.15
60	For Cartridge Fuses.....	4141H13	0.65	4141H13-15	7.75
60	For 2 Blades & 2 Fuses.....			4141H16	7.40
100	For Cartridge Fuses.....	4141H11	10.20	4141H20	11.20
100	For 2 Blades & 2 Fuses.....			4141H21	11.80

METER SERVICE SWITCHES

Cutler-Hammer (T-V) Without End Walls

Meter Test Type		Live Fuse Type	Without End Walls	
30	For Plug Fuses.....	4307H1&5	\$ 2.75	4307H9 \$ 3.45
30	For Cartridge Fuses.....	4307H2&6	3.05	4307H10 3.75
60	For Cartridge Fuses.....	4307H3&7	15.45	4307H11 9.70
100	For Cartridge Fuses.....	4307H4&8	8.05	4307H12 16.00
		Dead Fuse Type		
30	For Plug Fuses.....	4309H1	2.20	4309H3 3.45
30	For Cartridge Fuses.....	4309H4	3.50	4309H6 9.00
60	For Cartridge Fuses.....	4309H8	15.05	4309H9 16.00
100	For Cartridge Fuses.....	4309H10&11	23.95	4309H12 25.70

SAFE-LOCK METER SERVICE SWITCHES Cutler-Hammer (T-V) Without End Walls

Main Type		Without End Walls	
Test Type			
30	For Plug Fuses.....	4325 H1&2	\$ 3.70 4325 H3
30	For Cartridge Fuses.....	4325 H4&5	4.50 4325 H6
60	For Cartridge Fuses.....	4325 H7&8	16.80 4325 H9
100	For Cartridge Fuses.....	4325 H10&11	25.60 4325 H12
Non-Test Type			
30	For Plug Fuses.....	4327 H1&2	3.40 4327 H3
30	For Cartridge Fuses.....	4327 H4&5	4.25 4327 H6
60	For Cartridge Fuses.....	4327 H7&8	16.00 4327 H9
100	For Cartridge Fuses.....	4327 H10&11	24.75 4327 H12

POLYPHASE METER SERVICE SWITCHES

Style & Numbers	End Walls	30 A.	60 A.	100 A.
Meter Test Sealed Fuse Type No. 4315H1-2-3	Yes	\$9.50	\$17.60	\$27.30
Meter Test Accessible Fuse Type No. 4329H18-19-20	No	9.95	20.35	30.00
Non-Meter Test Accessible Fuse Type No. 4329H25-26-27	No	9.35	18.60	28.25

UNIVERSAL METER SERVICE SWITCHES Cutler-Hammer (T-V)

No.	Without End Walls	Price
4311H1.....		\$3.45
4311H2.....		3.75
4311H3.....		4.30
4311H4 & 5.....		4.80

For Detailed Description See Cutler Hammer (Trumbull Vanderpoel) Catalog.

TROUGHS

Cutler-Hammer (T-V)

$\frac{2-3 \text{ \& } 4^{\circ}}{45c}$	$\frac{5^{\circ}}{50c}$	$\frac{7^{\circ}}{62c}$	$\frac{9^{\circ}}{80c}$	$\frac{10^{\circ}}{88c}$
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SHUTTERS END WALLS

	30 Amp.	60 & 100 Amp.
Single Piece End Wall used with Cabinet.....	\$.30	\$.80
Shutters for Shutter Type End Wall.....	.15	.27
Conduit End Wall.....	.30	.80
Universal End Wall.....	.40	....

TYPE "A" SWITCHES

Single Throw—Series 4111

Fusible 250 Volt DC or AC				Fusible 500-600 Volts AC					
Amps. 2 Pole		3 Pole		Amps. 2 Pole		3 Pole			
30	4111H12	\$10.80	4111H20	\$12.60	30	4111H11	\$14.40	4111H30	\$18.00
60	4111H2	13.50	4111H21	17.10	60	4111H12	16.20	4111H31	18.90
100	4111H3	20.70	4111H22	27.00	100	4111H13	25.20	4111H32	28.80
200	4111H4	32.40	4111H23	36.00	200	4111H14	30.60	4111H33	45.00
400	4111H5	63.00	4111H24	81.00	400	4111H15	73.80	4111H34	88.20
Non-Fusible 250 DC or 500-600 AC				Non-Fusible 250 DC or 500-600 AC					
Amps. 2 Pole		3 Pole		Amps. 2 Pole		3 Pole			
30	4111H74	\$ 9.45	4111H84	\$11.25	30	4111H75	11.70	4111H85	14.40
60	4111H75	11.70	4111H85	14.40	60	4111H76	19.80	4111H86	22.60
100	4111H76	19.80	4111H86	22.60	100	4111H77	25.20	4111H87	30.60
200	4111H77	25.20	4111H87	30.60	200	4111H78	54.00	4111H88	63.00
400	4111H78	54.00	4111H88	63.00					
Solid Neutral				Solid Neutral					
3 Pole Switches with Solid Neutral				3 Pole Switches with Solid Neutral					
No Extra Charge				No Extra Charge					

ELECTRICAL CONTRACTING

Switches

Manual Operated

Series	Description	Amps	Volts	2 Pole	3 Pole	4 Pole
4151H1	Light Duty Motor Sw. $\frac{3}{4}$ HP For Less.....	30	125	\$ 1.65	.....	.....
9115H3	Motor Switch with 3 Pole Cutout.....	30	250	.....	\$13.75	\$19.10
4231H	For infrequent Duty.....	30	280	8.10	9.95	12.85
4246H	For infrequent Duty 5 HP.....	30	220	12.45	13.05	16.50
4246H	For infrequent Duty 7 $\frac{1}{2}$ HP.....	30	440	19.45	23.40	26.55
4246H	For infrequent Duty 7 $\frac{1}{2}$ HP.....	60	220	17.10	19.45	26.55
4256	Motor Reversing Sw. Dble. Throw.....	30	250	13.95	18.90	24.75
4256	Motor Reversing Sw. Dble. Throw.....	60	250	17.55	22.05	32.40
4256	Motor Reversing Sw. Dble. Throw.....	100	250	29.25	37.35	64.80

Numbers	Amps.	Volts	Fusing	2 Pole	3 Pole
5790 EW Porc. Base.....	30	125	For 1 Plug Fuse.....	\$1.65	
5791-2-34 & 5893	30	125	Plug Fuse.....	1.85	\$3.45
5891-5892 Porc. Base	30	125-250	" " " " " "	1.85	2.40
13640-13641 Kappa.....	30	250	No Fuse-Slate Base.....	2.75	4.10
13642-43 & 13743.....	30	250	For Enclosed Fuses.....	2.75	4.35
13221-13321 Quick Break.	30	250	" " " " " "	5.50	5.20

16361 to 16368.....	30	125-250	For Plug Fuses.....	\$2.70	\$3.45
16371 " 16378.....	30	"	Enclosed Fuses..	3.05	3.75
16381 " 16388.....	60	250	"	8.45	8.90
16391 " 16398.....	100	250	"	15.05	15.95

16300 to 16309.....	30	125-250	For Plug Fuses....	\$ 2.70	\$ 3.45
16315 " 16324.....	30	" "	Enclosed Fuses.	3.05	3.75
16330 " 16338.....	60	" "	" "	8.45	8.90
16341 " 16348.....	100	" "	" "	15.05	15.95

18111.....	30	125	For 1 Plug Fuse....	\$ 3.25
18211-18311.....	30	125	Plug Fuses.....	3.70	\$4.20
18121.....	30	125-250	1 Enclosed Fuse.	3.60
18221-18321.....	30	"	Enclosed Fuses.	4.45	4.45
18122-222-322.....	60	"	"	15.05	15.95
18123-223-323.....	100	"	"	23.85	25.00

19111.....	30	125	For 1 Plug Fuse....	\$ 3.05
19211-19311.....	30	125-250	Plug Fuses.....	3.35	\$3.70
19121.....	30	" "	1 Enclosed Fuse	3.60	
19221-19321.....	30	" "	Enclosed Fuses	4.25	4.25
19122-222-322.....	60	" "	" "	14.15	15.00
19123-223-323.....	100	" "	" "	23.00	23.80

15827.....	30	125	For 1 Plug Fuse....	\$ 2.20	...
28111-28211-28311.....	30	125	" Plug Fuses....	3.25	\$ 3.40
28121.....	30	125	" 1 Enclosed Fuse	3.50	...
28221-28321.....	30	125-250	" Enclosed Fuses.	3.75	4.00
28122-28222-28322.....	60	"	"	12.85	13.75
28123-223-323.....	100	"	"	21.60	23.30

#071-123.....	30	125	For 1 Plug Fuse.....	\$3.45
972-123.....	30	125	For 1 Plug Fuse.....	4.80
973-333.....	30	125	For 2 Plug " Solid Neu.	\$3.75
975-333.....	30	125	For 3 Combinations....	4.85	4.85
979-333.....	30	125	For 4 Combinations....	4.85	4.85

Series Nos.	Style	30 Amp.		60 Amp.	
		3 Pole	4 Pole	3 Pole	4 Pole
15321-15623	Acc. Fuse—Test Conn.	\$11.60	\$15.60	\$21.10	\$37.00
17321-17623	Acc. Fuse without Test Conn.	10.95	12.80	19.40	22.00
26321-26623	Sealed Fuse with Test Conn.	11.50	14.40	17.60	35.50

March, 1930

Trumbull Electric

		30 A.	60 A.	100 A.
End Wall One Piece for Standardized Switches.....	\$.30		\$.70	\$.70
End Wall One Piece for Polyphase Switches.....	.40		1.00	1.15
Shutters for End Walls for Standardized Switches.....	.15		.30	.30
Shutters for End Walls for Polyphase Switches.....	.30			
Troughs 2-3" & 4....	\$.40	5".....	\$.45	6".....
			\$.50	7".....
				\$.55

Trumbull Electric Single Throw, Quick Make & Break

Amps.	250 Volts Fusible		250 Volts Unfused	
	2 Pole	3 Pole	2 Pole	3 Pole
30.....	#72221 \$10.80	#72321 \$12.00	#36221 \$ 9.45	#36321 \$11.25
60.....	#72222 13.50	#72322 17.10		
100.....	#72223 20.70	#72323 27.00		
200.....	#72224 32.40	#72324 36.00		

Amps.	500 Volts Fusible		500 Volts Unfused	
	2 Pole	3 Pole	2 Pole	3 Pole
30.....	#72251 \$14.40	#72351 \$18.00	#36251 \$10.70	#36351 \$13.05
60.....	#72252 18.00	#72352 21.60	#36252 13.05	#36352 15.40
100.....	#72253 25.20	#72353 28.80	#36253 19.80	#36353 21.60
200.....	#72254 39.60	#72354 45.00	#36254 25.25	#36354 30.60

Trumbull Electric Single Throw, Quick Break Only

Amps.	250 Volts Fusable				250 Volts Unfused			
	2 Pole		3 Pole		2 Pole		3 Pole	
30.....	#40221	\$ 5.40	#40321	\$ 6.75	#20221	\$ 4.95	#20321	\$ 6.30
60.....	#40222	8.10	#40322	9.90				
100.....	#40223	12.60	#40323	15.30				
200.....	#40224	19.80	#40324	26.10				

Amps.	500 Volts AC Fusable				250-500 Volts Unfused			
	2 Pole		3 Pole		2 Pole		3 Pole	
30.....	#40251	\$ 9.00	#40351	\$ 8.55	#20251	\$ 7.10	#20351	\$ 8.10
60.....	#40252	9.90	#40352	10.80	#20252	8.10	#20352	8.55
100.....	#40253	14.40	#40353	17.10	#20253	10.80	#20353	12.15
200.....	#40254	28.80	#40354	32.40	#20254	18.90	#20354	22.50

Westinghouse Residence Type

	2 Poles	3 Poles
Midget-Solid Neutral-1 Blade-1Fuse #2612 & Type 00	#2613 \$1.65	
" " Fusible For Plug Fuses 125-250 V.	#60969 1.85	#60961 \$3.00
" " Fusible Solid Neut. For Plug Fuses 125-250 Volts.	#60901 1.75	#62328 2.70
" " Fusible Solid Neut. For Plug Fuses 3 Blades.		#60962 3.00
" " Non-Fusible 2 Blades 250 Volt.	#60990 2.55	#62332 2.70
" " Non-Fusible 3 Blades 250 Volt.		#62365 4.00
" " Fusible For Cart. Fuses 250 Volt.	#60988 2.45	#62363 4.30
" " Fusible For Cart. Fuses Solid Neut.		#62351 3.15
" " Fusible For Cart. Fuses 3 Blade Solid Neutral.		#62364 4.20
Type WK-45 Fusible For Cart. Fuses 3 Blade 250 Volt.		#545101 5.25
Type WK-45 Solid Neut. Cart. Fuses 250 V.		#545341 5.25
Type WK-45 Non-Fusible Cart. Fuses 250 V.		#545001 4.10

Westinghouse Type "WK-54" Without End Walls

Amps.	Fused	Dead Fuse Type				Live Fuse Type			
		2 Pole		3 Pole		2 Pole		3 Pole	
	For	No.	Price	No.	Price	No.	Price	No.	Price
30	Plug.....	61140	\$ 2.20			60224	\$ 2.70	59442	\$ 3.45
30		61143	3.25	61142	\$3.45	59441	2.70	60225	3.45
30	Enclosed.	61639	3.50			64371	3.05	60227	3.75
60		61150	7.00	61151	7.00	59461	8.45	60229	8.90
100		61152	23.85	61153	25.50	59463	15.05	60232	15.95

3 Pole Sealed Main Fuse Meter Testing					
30 Amp.	No.	60997	With End Wall	\$11.50	No. 60266 Less End Wall \$11.00
60 "	"	60998	" "	17.50	" 60267 " " 16.50
100 "	"	60999	" "	27.50	" 60268 " " 30.00

Westinghouse "WK-65" Without End Walls

Amps.	Fused For	With Test Facilities				Without Test Facilities			
		2 Pole		3 Pole		2 Pole		3 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30	Plug.....	65000	\$ 3.25			65010	\$ 3.05		
30	"	65001	3.70	65002	\$4.15	65011	3.35	65012	\$3.70
30	"	65005	3.60			65003	3.60		
30	Enclosed.	65006	4.45			65004	3.25		
60	"	65005	16.80	65008	17.70	65015	15.95	65016	16.80
100	"	65007	25.60	65008	27.40	65017	24.75	65018	25.60

					Meter Test Type	Non Meter Test Type		
30	Amp.	3	Pole	without End Wall	No. 65100	\$11.20	No. 65103	\$10.55
60	"	3	"	" " " "	No. 65101	20.35	No. 65104	18.60
100	"	3	"	" " " "	No. 65102	30.00	No. 65105	23.15

Westinghouse "WK-57" Meter Service Switches Without End Walls. Sealed Main Fuses.

All 30 Amp. 125 Volt Standardized	For Full Details See	#57924.....	\$3.45
	Westinghouse	57925.....	4.65
	Switch Catalog #282	57926.....	3.75
		57928.....	5.90
		57931.....	6.30

Westinghouse

		30 Amp.	60 & 100 Amp.
One Piece Meter Trims.....		\$0.30	\$0.50
Blank End Wall or Shutter Type End Wall.....		.30	.50
Shutter Type Meter Trim or Adaptor Trim.....		.15	.30
New Universal Trim with slide.....		.30	
Replacement Plate Adapting Plate.....		.15	
Wiring Trough—2-3 & 4' long.....	\$0.40 5' .	\$.45 6' .	\$.50 7' .
			\$.55 8' .
Fuse Receptacle #R57252.....			Less Fuses, \$1.25

QUICK BREAK ONLY
Industrial Westinghouse "WK-62" Type "C"

250 Volts Fusible				500 Volts AC Fusible			
Amps.	2 Pole	3 Pole	3 Pole	2 Pole	3 Pole	3 Pole	3 Pole
30.....	#62100 \$ 5.40	#62101 \$ 6.75		#62200 9.00	#62201 8.80		
60.....	#62103 8.10	#62104 9.90		#62203 9.00	#62204 10.80		
100.....	#62106 12.60	#62107 15.30		#62206 14.40	#62207 17.10		
200.....	#62109 19.80	#62110 26.10		#62209 28.80	#62210 32.40		

250-500 Volts Non-Fusible				600 Volts Non-Fusible			
Amps.	2 Pole	3 Pole	3 Pole	3 Pole	4 Pole	4 Pole	4 Pole
30.....	#62047 7.65	#62048 8.10		#62054 \$13.05	#62055 \$18.90		
60.....	#62013 8.10	#62014 8.55		#62057 17.10	#62058 26.10		
100.....	#62016 10.80	#62017 12.15		#62060 27.90	#62061 44.10		
200.....	#62019 18.90	#62020 22.50					

Industrial Westinghouse "WK-66" Quick Make & Break

250 Volts Fusible				500 Volts AC Fusible			
Amps.	2 Pole	3 Pole	4 Pole	Amps.	3 Pole	4 Pole	5 Pole
30	#66100 \$10.80	#66101 \$12.60	#66154 \$14.40	#66155 \$18.00			
60	#66103 13.50	#66104 17.10	#66157 16.20	#66158 18.90			
100	#66106 20.70	#66107 27.00	#66160 25.20	#66161 28.80			
200	#66109 32.40	#66110 36.00	#66163 39.60	#66164 45.00			
250-500 Volts Non-Fusible				600 Volts Non-Fusible			
Amps.	2 Pole	3 Pole	4 Pole	Amps.	3 Pole	4 Pole	5 Pole
30	#66050 \$11.70	#66051 \$13.95		#66048 \$17.10	#66049 \$21.60		
60	#66053 11.70	#66054 14.40		#66057 24.75	#66058 32.40		
100	#66133 19.80	#66134 21.60		#66060 33.30	#66061 46.80		
200	#66136 35.20	#66137 36.60					

GENERAL UTILITY SWITCHES

Noark Closed Ends

Numbers	Amps.	Volts	Fused For	2 Pole	3 Pole
8283.....	30	125	For Plug Fuses.....	\$1.65	.....
8383-8483-8303....	30	125		1.65	\$2.50
8683-8693.....	30	125	* Enclosed * Quick Break.	1.80	3.15

METER SERVICE SWITCHES

Noark Sealed Service SECO Without End Walls

Amps.	Fused For	Test Type				Non Test Type			
		2 Pole		3 Pole		2 Pole		3 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30A	Plug.....	9543	\$3.25	9523	\$4.45	8543	\$2.85	8523	\$3.00
30A	Enclosed.....	9563	3.75	9533	4.00	8563	3.40	8533	3.65
30A	Plug & Enc.....	9573	3.50			8573	3.15	8593	2.45
60A	Enclosed.....	9566	12.00	9536	15.75	8566	11.00	8536	12.90
60A	".....	9576	12.00			8576	11.10		
100A	".....	9561	21.20	9531	23.00	8561	20.35	8531	21.20

Noark Accessible Service ACCO Without End Walls

Amps.	Fused For	Test Type				Non Test Type			
		2 Pole		3 Pole		2 Pole		3 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30A	Plug.....	9343	\$3.25			8343	\$3.05		
30A	".....	9353	3.70	9323	\$4.15	8353	3.40	8323	\$3.70
30A	Enclosed.....	9363	4.50	9333	4.45	8363	4.25	8333	4.25
60A	".....	9366	15.05	9336	15.95	8366	14.15	8336	15.05
100A	".....	9361	23.85	9331	25.60	8361	23.00	8331	23.85

Noark Universal Without End Plates

	No. 971123	—Without End Walls.....	\$3.45
	" 9723	" " " " " " " "	4.65
	" 972123	" " " " " " " "	4.30
	" 973333	" " " " " " " "	3.75
For Detailed	" 9753 & 9793	" " " " " " " "	5.20
Description,	" 975333-979333	" " " " " " " "	4.85
see Noark Catalog			

Noark Doall Without End Plate

Amps.	Fused For	2 Pole		3 Pole	
		Numbers	Price	Numbers	Price
30A	Plug.....	913123-911123	\$ 2.70	912333-914333	\$ 3.46
30A	Enclosed.....	923123-921223	3.05	922333-924333	3.75
60A	".....	923126-921226	8.45	925336	8.90
100A	".....	923121-921221	15.05	925331	15.95

NUBLADE SWITCHES

Noark Fusible—Quick Break

Amps.	250 Volts Fusible			500 Volts AC Fusible		
	2 Pole	3 Pole	3 Pole	2 Pole	3 Pole	3 Pole
30	\$222	\$ 2.70	\$233	\$423	\$ 9.00	\$433
60	\$226	1.10	\$236	\$426	9.00	\$433
100	\$221	12.60	\$231	\$421	14.40	\$431
200	\$222	10.80	\$232	\$422	28.80	\$432
400	\$224	48.60	\$234	66.00	.....	.....

Noark Not-Fusible—Quick Break

Amps.		Volts		2 Pole		3 Pole		4 Pole		Price	
30	250		8723		2.70	8733		4.05	8743		\$ 8.10
30	500 AC		8623		7.65	8633		8.10	8643		18.30
60	250-500		8626		8.10	8636		10.90	8646		18.30
100	250-500		8621		10.80	8631		18.00	8641		27.30
200	250-500		8622		18.90	8632		29.10	8642		42.75
400	250-500		8624		30.60	8634		54.00	8644		86.40

ACCESSORIES FOR NOARK SWITCHES

Single Piece End Wall for 30 Amp. Switches.....	\$.30	For 60 & 100 Amp.....	\$.80
Shutter for 30.....	.15	60 & 100.....	.30
Universal End Wall No. 909103.....	.40		
Blanking Side No. 908103-908203.....	.15		
Trough—3 & 5' \$.40—6' \$.45—7'.....	.50	8'—\$.55—9'.....	.80
Cabinet Fuse Block No. 902413.....	1.25		

POLYPHASE

Noark Switches Without End Walls

125-250 Volts		Main Entrance					
"Doall" & 3 Wire		"Acco"		Quad Break		"Seco" Quad Break	
Amps.	No.	Price	No.	Price	Accessible Fuses	Sealed Fuses	Price
30A.....	851233	\$ 4.70	77033	\$10.50	77533		\$10.40
60A.....	851236	11.70	77036	18.60	77536		15.05
100A.....	851231	19.20	77031	28.25	77531		24.75
Meter Service							
30A.....	931233	\$11.05	67033	\$11.15	67533		\$11.05
60A.....	931236	16.65	67036	20.35	67536		16.80
100A.....	931231	26.15	67031	30.00	67531		26.50

MAIN ENTRANCE SWITCHES

Noark Doall Without End Walls

NOMAL DASH WITHOUT END WIRE					
Amps.	Fused For	2 Pole Numbers	Price	3 Pole Numbers	Price
30	Plug Fuses	813123-811123	\$ 2.70	812333-814333	\$ 3.45
30	Enclosed Fuses	853123-851223	3.75	852333-854333	4.30
60	"	853126-851226	8.45	855336	8.90
100	"	853121-851221	15.05	855331	15.95

SOLID NEUTRAL SWITCHES

Noark Fusible—Quick Break

Amps.	Volts	3 Pole-2 Poles		4 Pole-3 Poles		5 Pole-4 Poles	
		No.	Price	No.	Price	No.	Price
30	125-250	8133	\$ 3.15	8143	\$ 8.10	8153	\$ 9.00
60	" "	8136	0.00	8146	11.25	8156	19.80
100	" "	8131	14.40	8141	19.80	8151	35.55
200	" "	8132	22.50	8142	31.50	8152	50.40
400	" "	8134	63.00	8144	81.00	8154	120.60

TOGGLE SWITCHES

Bulldog

125 V.-2 Pole-One Blade		No. 111 & 211	BT-TE-TF	
"	2	Two	TE-211S	\$ 1.80
"	3	Three	TE-311S	4.50
"	3	Three	TE-311SB	5.00
"	3	Three	TE-311S	8.10
"	3	Three	TE-311SG	7.20
250	2	Two	TF-221S	5.40
"	3	Three	TF-321S	8.10
"	3	Three	TF-321SG	7.65
500-600 V.-3 Pole-Three Blade 3 Fuse Conn.			TF-351S	12.60
250-600 "	2		TN-261S	5.40
"	3		TN-361S	7.20
"	3		TN-361SR	10.80
Motor Starter	3	TJM-321S & TJM-321SU		9.00

TYPE "C" SWITCHES

Bulldog Single Throw Fusible Quick Make & Break

Amps.	250 Volts DC & AC			
	2 Pole		3 Pole	
30 125 Volt only	JF211S	\$ 2.70	JF311S	\$ 4.40
30 Porc. Base	JF221S	3.15	F321S	5.15
30 End Plates	JF221P	3.15	F321P	5.15
30 Slice Base	JF221	3.40		
60 " "	JF222	8.10	F322	9.90
100 " "	JF223	12.60	F323	15.30
200 " "	JF224	19.80	F324	26.10
400 " "	SF223	48.60	SF325	66.60

500-600 Volts A. C.

Amps.		3 Pole	4 Pole
30	125 Volt only.....	.....	.....
30	Port. Base.....	.....	.....
30	End Plates.....	.....	.....
30	Slate Base.....	1F351	1F451
60	" ".....	\$10.95	\$ 18.20
60	" ".....	1F352	1F452
100	" ".....	13.65	20.00
100	" ".....	1F353	1F453
200	" ".....	21.85	36.40
200	" ".....	1F354	1F454
		38.25	52.00

TYPE "C" SWITCHES

Bulldog Single Throw Not-Fusible

2 Pole		3 Pole	
Amps.			
250 Volts	JN2215 \$ 3.15	JN3315 \$ 4.15	
30 " " " "		JN351 8.15	
60 " " " "	{ 2 Pole Switches Supplied in Type A only. }	JN352 10.95	
100 " " " "		JN353 17.30	
200 " " " "		JN354 29.15	
4 Pole			
250 Volts		JN4215 \$ 8.00	
30 " " " "		JN451 10.80	
60 " " " "		JN452 19.20	
100 " " " "		JN453 27.30	
200 " " " "		JN454 42.75	

Switches

Bulldog

2 Pole—125 Volt—Fusible—for Plug Fuses No. JE211 S & P.....	\$1.65
" " " " " " " " " " " "	
Quick Make & Break JF211S.....	2.70
2 Pole—250 Volt—Fusible—for Cart. Fuses SF221 S & P.....	2.50
2 Pole—250 Volt—Not Fusible—for Cart. Fuses SN221 S & P.....	2.70
3 Pole—125 Volt—Fusible—for Plug Fuses No. JE311 SP & PG.....	3.00
3 Pole—125 Volt—Fusible—for Plug Fuses Quick Make & Break JF311S	4.35

"TYPE A"

Bulldog Single Throw Quick Make and Break

		2 Pole		3 Pole	
		Number	Price	Number	Price
250 Volts Fusible					
30 Amp.		SF-221	\$ 10.80	SF-321	\$ 13.50
60 "		SF-222	13.50	SF-322	18.00
100 "		SF-223	20.70	SF-323	27.00
200 "		SF-224	36.00	SF-324	41.50
400 "		SF-225	67.50	SF-325	90.00
500-600 Volts Fusible					
30 Amp.				SF-351	10.80
60 "				SF-352	20.70
100 "				SF-353	31.50
200 "				SF-354	52.20
400 "				SF-355	108.00
250-500-600 Not Fusible					
30-60 Amp.					
100 "		SN-251	\$13.50	SN-351	15.75
200 "		SN-253	20.70	SN-353	23.85
400 "		SN-254	27.90	SN-354	34.50
		SN-255	51.00	SN-355	90.00
600 Volts Fusible					
30 Amp.		SF-261	16.20	SF-361	19.30
60 "		SF-262	17.10	SF-362	19.80
100 "		SF-263	27.00	SF-363	31.70
200 "		SF-264	42.30	SF-364	48.60
400 "		SF-265	90.00	SF-365	122.00
600 Volts Not Fusible					
30-60 Amp.					
100 "		SN-261	12.60	SN-361	16.20
200 "		SN-263	20.25	SN-363	24.75
400 "		SN-264	26.50	SN-364	33.75
		SN-265	65.50	SN-365	87.75
350 Volts Fusible					
30 Amp.					
60 "					
100 "					
200 "					
400 "					
500-600 Volts Fusible					
30 Amp.					
60 "					
100 "					
200 "					
400 "					
250 500-600 Not Fusible					
30-60 Amp.					
100 "					
200 "					
400 "					
600 Volts Fusible					
30 Amp.					
60 "					
100 "					
200 "					
400 "					
600 Volts Not Fusible					
30-60 Amp.					
100 "					
200 "					
400 "					

COMPENSATOR SWITCHES "A"

Bulldog Quick Make & Break Fusible

Amps.		250 Volt AC			
		3 Pole		4 Pole	
30 A.	SF331 C	\$16.20	SF431 C	\$ 21.60	
60 A.	SF332 C	20.25	SF432 C	26.10	
100 A.	SF333 C	31.50	SF433 C	40.80	
200 A.	SF334 C	45.90	SF434 C	64.80	
400 A.	SF335 C	94.50	SF435 C	129.00	

Amps.		500-800 Volts AC			
		3 Pole		4 Pole	
30 A.	SF351 C	\$30.70	SF451 C	\$32.40	
60 A.	SF352 C	31.00	SF452 C	36.00	
100 A.	SF353 C	33.75	SF453 C	61.20	
200 A.	SF354 C	50.40		.....
400 A.	SF355 C	105.60		.....

MOTOR STARTERS

Bulldog

30 Amp Type C-Port. Base-110 to 440 Volt			3 Pole	
30	"	C Slate " 440 & 550 "	JM-321S	\$ 6.75
30	"	" " 250 Volt "	JM-351	11.70
30	"	" " 500 " "	MF-321	37.00
30	"	" " 250 " "	MF-351	27.75
60	"	" " 250 " "	MF-322	23.50
90	"	" " 500 " "	MF-352	28.80

30 Amp Type C-Port. Base-110 to 440 Volt			4 Pole	
30	"	C-Slate " 440 & 550 "		.....
30	"	" " 250 Volt "	MF-421	\$22.80
30	"	" " 500 " "	MF-481	35.25
60	"	" " 250 " "	MF-422	29.45
90	"	" " 500 " "		

NOTE: For Bulldog Switches not listed deduct 10% from Bulldog Lists.

Columbia, 30 Amp.

Description				2 Pole
Single Fused	Single Blade	125 Volt-Plug Fused	320-321	\$1.50
Double	Double	125 " " "	1920	1.65
"	"	" " " "	3930	1.90
"	"	250 " " Cartridge Fused	322	2.50
"	"	250 " " "	422	2.85

Description				3 Pole
Single Fused-Single Blade	125 Volt-Plug Fused			
Double	Double	125 " " "	1931-3	\$2.15
"	"	" " " "	3931-2	2.45
"	"	" " " "	323	3.00
"	"	250 " " Cartridge Fused	423	4.40
"	"	250 " " "		

BRANCH CIRCUIT ENTRANCE SWITCHES

Columbia

30 Amp. Series	2 Circuit		4 Circuit		6 Circuit		8 Circuit	
	2 Pole	3 Pole	2 Pole	3 Pole	2 Pole	3 Pole	2 Pole	3 Pole
2401 to 2408	\$3.90	\$4.90	\$5.20		\$5.85	\$6.20	\$7.15	
3401 to 3406	4.90	6.20	6.50		7.15	8.45	9.60	
3501 to 3506	4.75	5.85	6.20		6.90	7.50	8.45	

Series 30—Quick Break—250 Volts for Meter Trims

For Cartridge Fuses

	30 Amp.	60 Amp.	100 Amp.	200 Amp.
2 Pole.....	3022 \$5.55	3025 \$ 8.75	3028 \$12.50	3031 \$18.20
3 Pole.....	3023 7.50	3026 10.00	3029 16.15	3032 24.05

INDUSTRIAL SWITCHES

Columbia

Series 70 Type C Fusible					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
250 Volts	30A	C7001	\$ 9.30	C7002	\$11.30
Fusible	60A	C7004	12.00	C7005	15.50
Quick Make	100A	C7007	18.85	C7008	23.65
& Break	200A	C7010	27.95	C7011	34.65

Series 70 Type A Fusible					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
350 Volts	30A	A7001	10.30	A7002	\$12.85
Fusible	60A	A7004	13.10	A7005	17.90
Quick Make	100A	A7007	21.45	A7008	27.50
& Break	200A	A7010	30.50	A7011	28.35

Series 71-500 Volts Fusible					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
500 Volts Quick Make & Break	30A	7101	\$13.60	7102	\$15.50
	60A	7104	14.00	7105	16.00
	100A	7107	23.50	7108	26.65
	200A	7110	37.70	7111	42.25

Series 73-500 Volts Unfused					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
500 Volts	30A	7301	\$10.80	7302	\$12.70
Quick Make	60A	7304	10.80	7305	13.25
& Break	100A	7307	17.15	7308	19.20
	200A	7310	26.35	7311	28.45

Series 72-600 Volts Fusible					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
600 Volts	30A	7201	\$14.60	7202	\$16.05
Quick Make	60A	7204	14.60	7205	16.05
& Break	100A	7207	24.10	7208	27.15
	200A	7210	38.60	7211	42.50

	Series 74-600 Volts Unfused			
	Amps	2 Pole	3 Pole	
	Number	Price	Number	Price
600 Volts	30A	7401 \$11.75	7402	\$14.35
Quick Make	60A	7404 12.45	7405	14.95
& Break	100A	7407 18.90	7408	21.45
	200A	7410 25.15	7411	29.25

Series 20-250 Volts Fusible					
Amps			2 Pole		
		Number	Price		Price
Quick Break Only 250 Volts	30A	2022	\$ 5.10	2023	\$ 6.85
	60A	2025	6.85	2026	7.90
	100A	2028	10.85	2029	13.35
	200A	2031	19.10	2032	23.85

Series 23-250-500 Volts Unfused					
	Amps	2 Pole		3 Pole	
		Number	Price	Number	Price
Quick Break	30A	2322	\$ 4.75	2323	\$ 6.25
Only	60A	2325	8.95	2326	9.50
250 Volts	100A	2328	11.35	2329	12.50
	200A	2331	19.10	2332	23.40

MOTOR STARTING SWITCHES

Columbia, 250 Volts

		2 Pole	3 Pole
30 Amp. Motor Start Switch.....	6001	\$12.50	6002 \$16.70
60 " " "	6004	13.10	6005 17.25
			4 Pole
30 Amp. Motor Start Switch.....			6003 \$19.65
60 " " "			6006 26.80

22 YEARS OF PROGRESSIVE DEVELOPMENT



1908



1910

1913
The First
Shallow Box SwitchPresent Day
Shallow Box Switch
(Single Pole)

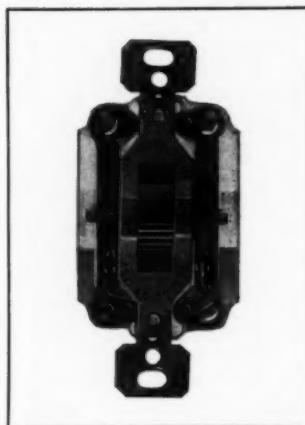
IN SWITCH MANUFACTURING

Paulding

NEW ENGLAND

Switches

MADE POPULAR
BY UNVARYING
QUALITY

Present-day de-
sign, (three-
way toggle)
shallow box
switch.Present-day de-
sign, three-
way (push but-
ton) shallow
box switch.**KAOLITE**

The new Paulding KAOLITE ceiling receptacles are strong in sales appeal. If you don't know about them you are overlooking an important source of profits. Write today for details.

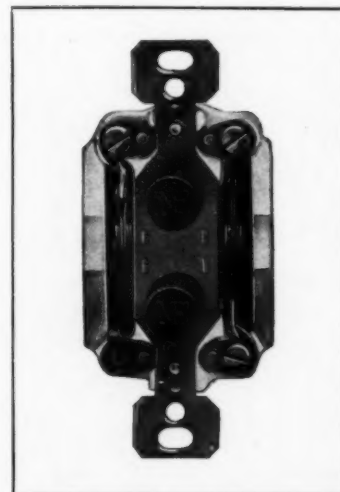


The important point is that Paulding engineers, through persistent research and close contact with the electrical trade for over 22 years, have shown a marked ability to anticipate the needs of the industry. Our experience in manufacturing wiring devices is your guarantee of perfection in design, and prices that are right.

Paulding was first to introduce and perfect a shallow box switch in 1913. Paulding is still first with the present-day shallow box switch that leads in quality and yet is low in price. **THE SAME RELIABLE COMPRESSION SPRING MECHANISM** (a lifetime mechanism) although changed in design to meet present-day requirements. Rugged porcelain made in the Paulding plant to Paulding specifications.

Paulding New England Switches for every purpose—single pole, three-way, double pole, four-way, push or toggle. All types of lock switches, surface toggle switches with or without outlet box covers. Rotary surface switches, indicating and non-indicating. Appliance switches. Jobbers and dealers write for prices and discounts.

John I. Paulding, Inc.
New Bedford, Mass.



The most satisfactory timing mechanism yet devised is embodied in G-E time switches *



*
A time-controlled switch for turning circuits "on" and "off" automatically



The success of the motor-operated timing element, as embodied in these superior switches, has also been demonstrated by the Telechron electric clock, a product of the Warren Telechron Company. This popular springless electric clock is likewise accurately regulated from the power station.

THINK of the advantages of an electric-motor-operated time switch—not motor-wound, but motor-operated. The little electric motor itself is the time-keeping element, much superior to a clock mechanism. It runs in step with the electric circuit; there is no winding to be done. Accuracy is controlled by the power supply; reliability of operation is beyond comparison with that of older methods. Restrictions as to location of the switch are removed. Attention is practically unnecessary.

Available through G-E distributors. A postal card or letter to your G-E distributor or the nearest G-E office will bring full information.

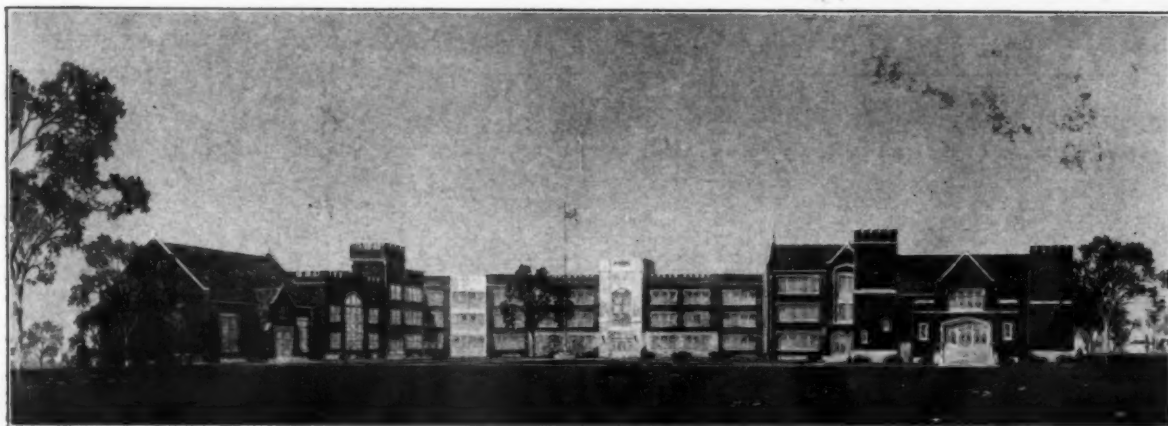
621-7

JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 9 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

For Permanent SATISFACTION— Wired with PARANITE!



THE new Western High School for Girls in Louisville, Kentucky, is one of the outstanding structures of its kind in the country. The architects and contractors have made certain—by the selection and use of the finest materials throughout—that the building will serve its purpose for years to come.

Indicative of their care was the selection of PARANITE Rubber Insulated Wire and Cables for

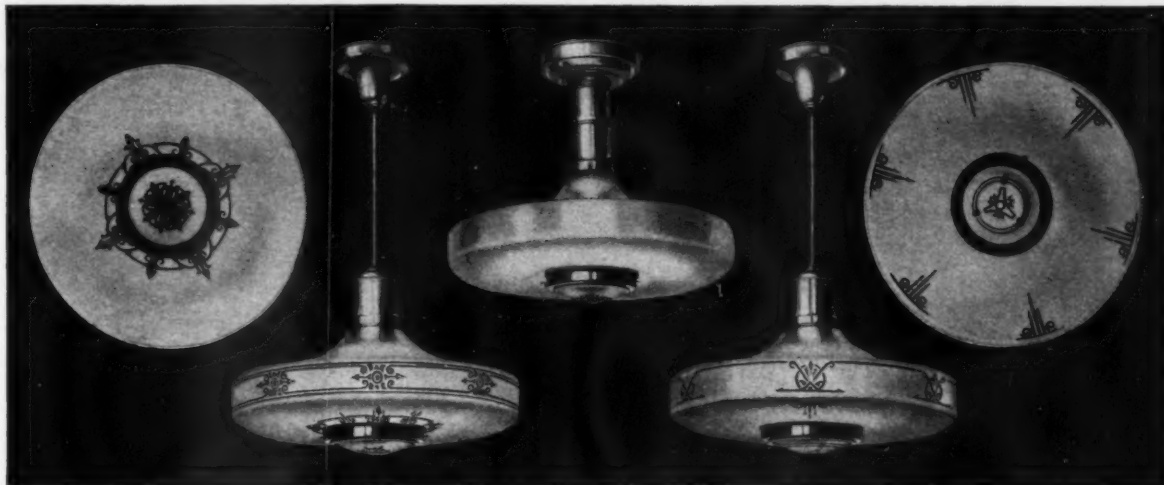
all electrical wiring. For forty years, PARANITE has consistently maintained its reputation for highest quality—"better than code requires." It can always be depended upon to give permanent satisfaction on every job, large or small . . . J. Meyrick Colley was the architect of the school, and The Theobald Jansen Electric Co., Louisville, were the electrical contractors.

PARANITE

"If It's PARANITE It's Right"

RUBBER INSULATED WIRE *and* CABLES

INDIANA RUBBER AND INSULATED WIRE CO. ★ JONESBORO, INDIANA



THE NEW IVANHOE KELDON

(GLASSWARE AND FIXTURES)

will help you sell new installations

ESSENTIALLY the same in general contour and in lighting values as the famous Keldons which have preceded them, these new Keldons come to you in new colors and with new decorative elements.

They meet today's demand for greater beauty and greater variety without any sacrifice in lighting efficiency; without any increase in price.

Now your customers have the choice of:

1. Plain white enameled glass.
2. Enameled white glass; decorated in two popular colors.
3. Plain lower half dark cream enameled glass; upper half crystal.
4. Dark cream enameled glass lower half, with decoration in brown and red; upper half crystal.

The new colors in no way impair the lighting efficiency of the unit and they definitely add a soft, pleasant lighting effect which proves particularly agreeable to all buyers and harmonizes perfectly with current style of neutral color wall treatments.

Recognized generally as *the most efficient semi-indirect lighting unit* on the market, the Keldon is also one of the most popular—millions are in use.

We firmly believe that the secret of Keldon popularity is its unrivaled combination of (1) efficiency; (2) beauty, (3) low maintenance cost.

The illustration clearly indicates the simple exquisitely balanced lines which win its ready acceptance. Being totally enclosed in dust-proof glass, with smooth, flat surfaces, the Keldon is easily cleaned by wiping off with a damp cloth. Lamp may be removed without dismantling the glassware.

The patented Keldon is sold as a complete unit. The fixture is especially designed for the glassware and the glassware for the fixtures.

There is an Ivanhoe distributor near you, who will gladly show you the new Ivanhoe Keldons and who will cooperate with you in making trial installation. Get in touch with him or write direct to us and we will see that you get prompt service.

IVANHOE DIVISION OF THE MILLER CO., 5716 EUCLID AVE., CLEVELAND, OHIO

IVANHOE

Wadsworth

30 Amp. Switches		30 Amp. Switches		30 Amp. Switches		30 Amp. Switches	
No.	Price	No.	Price	No.	Price	No.	Price
8	\$4.90	223	\$2.40	1203	\$5.95	2224	\$0.55
12	1.90	224	3.00	1212	4.00	2212	4.05
15	1.25	241	5.05	1223	4.45	2233	4.25
17	3.30	242	4.70	1250	3.30	2330	9.15
21	3.30	243	5.05	1322	4.15	2334	9.85
25	2.20	244	4.70	1401	4.10	2351	3.80
25T	3.10	271	4.00	1402	3.65	2461	6.55
26	2.65	272	4.00	1403	3.05	2462	6.20
27	2.50	273	4.70	1401T	4.60	2463	6.55
30	1.55	274	4.40	1402T	4.05	2464	6.20
31T	2.75	284	4.80	1403T	4.25	2534	6.75
33	1.65	292	4.00	1411	4.50	2632	3.25
33T	2.90	294	5.35	1411T	5.15	2633	4.65
35	2.50	322	6.20	1412	3.95	2639	4.65
39	3.75	331	4.85	1412T	4.35	3032	11.15
99	.10	332	6.55	1423	4.40	3033	12.00
100	.10	340	4.75	1423T	4.85	3532	9.10
101	.50	341	5.05	1450	3.30	3533	10.00
131	3.90	350	3.20	1450T	3.80	3534	13.30
132	3.30	362	4.15	1451	3.50	3539	10.00
133	3.90	370	4.15	1451T	3.95	3632	16.80
141	4.15	372	4.95	2202	4.50	3633	21.15
142	3.75	380	4.65	2202T	4.90	3634	22.05
143	4.15	382	4.70	2203	4.50	3639	21.10
144	4.55	392	5.05	2203T	4.90	8531	8.90
145	4.95	440	6.20	2212	4.75	8532	8.45
151	3.40	441	6.55	2212T	5.15	8533	9.75
152	3.00	443	6.55	2223	4.75	8534	12.45
153	3.40	461	6.55	2223T	5.15	8539	9.75
154	4.45	462	6.20	2230	10.40	9531	15.45
211	4.15	463	6.55	2231	11.25	9532	15.70
212	3.75	464	6.20	2250	8.85	9533	15.45
213	4.15	633	5.35	2250T	4.25	9534	17.75
214	3.75	734	11.15	2251	3.85	9539	15.45
221	2.65	1013	4.20	2251T	4.25	9862	8.45
222	3.00	1014	6.10	2254	6.20	9863	8.90
		1202	3.65			9864	13.90

Wadsworth

60 Amp. Switches		100 Amp. Switches		200 Amp. Switches	
No.	Price	Number	Price	Number	Price
6	\$10.45	10	\$12.15	20	\$16.20
101	9.60	102	15.70	522	19.80
102	9.15	110	16.55	523	24.95
103	11.80	111	16.55	722	37.05
171	9.55	112	16.70	723	51.90
172	9.15	113	18.95	724	57.85
503	11.45	513	17.25	729	52.00
1034	13.30	1033	11.55	1042	14.20
1762	16.30	1034	16.50	1043	22.00
1763	22.75	1712	27.35	1044	31.35
1764	21.45	1713	35.40	2622	18.15
1769	21.70	1714	35.00	2623	21.45
1800	15.70	1719	30.90	2624	40.85
1802	16.55	1900	34.95	2629	19.80
1803	17.40	1902	25.20	2812	11.55
1812	17.40	1903	26.10	2813	14.65
1830	10.10	1912	26.10	2819	13.90
1834	20.90	1930	28.70	3212	10.20
1842	17.40	1934	30.50	3213	11.55
1843	18.25	1942	26.10	3522	27.20
1851	18.65	1943	27.90	3523	31.15
2032	15.65	1951	26.10	3524	42.15
2034	17.40	2130	25.20	3529	31.15
2042	15.70	2134	26.95	3622	41.60
2043	16.55	2142	24.40	3623	47.35
2051	14.80	2143	26.10	3624	53.20
2054	15.30	2151	24.40	3629	47.35
2961	8.45	2614	35.60	4603	54.45
2962	8.00	3512	24.35	4643	59.40
2963	9.30	3513	17.75	4630	59.75
2969	9.30	3514	25.60	4634	64.70
3162	15.95	3519	17.75	4734	49.75
3163	17.75	3612	24.85	4739	44.50
3262	8.00	3613	31.95		
3263	8.45	3614	35.90		
3562	9.75	3619	31.95		
3563	11.55	8511	14.65		
3564	13.75	8512	12.45		
3569	11.55	8513	15.55		
3662	17.05	8514	27.50		
3663	22.05	8519	15.55		
3664	24.00	9511	29.30		
3669	22.05	9512	24.85		
8561	9.30	9513	29.30		
8562	8.90	9514	39.00		
8563	10.20	9519	29.30		
8564	14.20	9812	10.65		
8569	10.20	9813	12.00		
9561	18.55	9814	21.45		
9562	14.65				
9563	18.55				
9564	23.25				
9569	18.55				

400 Amp. Switches

EXTRA END WALLS—SHUTTERS—TRIMS—ETC.

Wadsworth		Knock-Meter	
Type of Trim		Shutter	
For 30 Amp. 125 Volt Switches	Flat	Extended	Shutter
" 30 " 250 " 2 Pole	\$.30	\$.50	\$.30
" 60 " 250 " 3 " "	.65	.83	.65
" 100 " 250 " 2 " "	.75	1.00	.75
" 100 " 250 " 3 " "	.82	1.00	.82
" 200 " 250 " 2 " "	.90	1.10	.90
" 200 " 250 " 3 " "	1.00	1.15	1.00
" 200 " 250 " 3 " "	1.10	1.25	1.10

Murray Switches

ENTRANCE SWITCHES

With End Wall		Description		2 Pole		3 Pole	
Amps.	Volts			No.	Price	No.	Price
30	125	For Plug Fuses 1 Blade 1 Fuse		630	\$ 1.50	230	\$2.25
30	125	" " " 2 " 2 "		231	1.65	230	1.65
30	125-250	For 2 Cartridge Fuses		...	...	831	2.10
30	125-250	" 3 Cart. Fuses-3 Phase-3 Wire		...	...	830	3.55
60	250	" 3 " " 4 " 4 "		...	...	760	17.40
60	250	" 3 " " 3 " 3 "		...	...	769	20.00
100	250	" 3 " " 3 " 3 "		...	...	710	29.05
100	250	" 3 " " 3 " 4 "		...	...	712	29.95
200	250	" 3 " " 3 " 3 "		...	...	720	60.75
200	250	" 3 " " 3 " 4 "		...	...	722	69.85

ACCESSIBLE MAIN FUSE SWITCHES

Meter Test Type		Without End Walls	
Amps	Volts	Description	
		No.	Price
30	125	For Plug Fuses One Fuse	755 \$ 3.65
30	125	" " " 2 & 3 Fuse	748 3.95
30	250	" Cart. " One Fuse	738 4.20
30	250	" " " Two Fuses	737 4.85
60	250	" " " For 1 Fuse	766 15.95
60	250	" " " For 2 Fuse	764 16.85
100	250	" " " For 2 Fuse	718 25.60

Meter Test		3 Phase		3 & 4 Wire Type		Without End Walls	
Amps	Volts					No.	Price
60	250	For 3 Cart. Fuses-3 Phase-3 Wire		...	...	767	\$19.90
60	250	" 3 " " 3 " 4 "		...	...	768	23.00
100	250	" 3 " " 3 " 3 "		...	...	711	30.00
100	250	" 3 " " 3 " 4 "		...	...	712	32.45
200	250	" 3 " " 3 " 3 "		...	...	721	64.80
200	250	" 3 " " 3 " 4 "		...	...	723	72.90

Not Meter Test		With Branches Combined		Without End Walls	
Amps	Volts			No.	Price
30	125	For Plug Fuses-One Fuse		754	\$ 3.35
30	125	" " " Two Fuses		752	3.65
30	250	For Cart. " " " "		757	4.55
60	250	" " " " " "		762	15.95
100	250	" " " " " "		716	24.75

"UNISAFTI"
(Universal Standardized Switches)

Number		Pole		Fuse		Neutral		Branches & Fusing		Price
234	2	Single	1-2-Wire	2	Fuses					\$3.25
235B	2	"	2-2	"	"					3.25
236	2	"	4-2	"	"					4.30
237	3	Two	Solid	1-3	"	2	"			3.75
237	3	"	"	1-2	"	2	"			3.75
237	3	"	Solid	2-2	"	2	"			3.75
238	3	"	"	4-2	"	4	"			4.85
238	2	"	Solid	2-2	"	4	"			4.85

METER SERVICE SWITCHES

Fuses & Blades Dead		Sealed Fuses		Without End Walls	
Amps.	Volts	Description		No.	Price
30	125	For Plug Fuses		232	\$ 2.20
60	250	For Cart. Fuses		364	15.05

Fuses Alive		Sealable Main Fuses		Without End Walls	
Amps.	Volts	Description		No.	Price
30	125	For Plug Fuses		330-1	\$ 2.65
30	250	For Cart. Fuses		130	2.65
60	250	" " " " "		360	8.45
100	250	" " " " "		310	15.05

SEALABLE MAIN FUSES

Polyphase-3 Wire		30 Amp.		60 Amp.		100 Amp.	
3 Pole-3 Blades-For Cart. Fuses 250V.		332	\$11.10	362	\$16.80	311	\$26.50

TYPE C SWITCHES

All Description		Quick Break		2 Pole		3 Pole		4 Pole	
Amps.	Volts	Description		No.	Price	No.	Price	No.	Price
30	125	Solid Neutral	125-250	632	\$ 3.35	633	\$ 4.40	634	\$ 3.70
30	125	" " " " "		...	...	636	4.95	...	...
60	125	" " " " "		661	8.35	663	9.45	664	12.15
60	125	" " " " "		...	...	665	9.45	...	...
100	125	" " " " "		611	13.30	613	16.20	614	24.75
100	125	" " " " "		...	...	615	16.20	...	...
200	125	" " " " "		621	23.40	623	28.80	624	51.30
200	125	" " " " "		...	...	625	24.30	...	...
200	125	" " " " "		...	...	622	28.80	623B	30.15

Switches

Diamond E Switches

SMALL ENTRANCE SWITCHES, 30 AMPS.

Volts	For Fuses	Description	2 Pole	3 Pole
125	Plug	All Fused	P-2 \$1.65	P-3 \$2.75
125	Plug	Ground Neutral	P-2S 1.65	P-3S 2.25
250	Cartridge	All Fused	C-2 2.25	C-3 4.00
250	Cartridge	Ground Neutral	.....	C-3S 2.90

ALL-N-ONE SWITCHES

Live Front	No. Circuits	Double Fuse Price	Dead Front	No. Circuits	Single Fuse Price
A-2	2	\$3.45	AD-3	3	\$ 5.40
A-3	3	3.80	AD-4	4	5.85
A-5	5	4.15	AD-5	5	6.75
A-7	7	6.60	AD-6	6	7.95
A-9	9	6.95	AD-8	8	9.30
			AD-10	10	11.25

RANGE & WATER HEATER SWITCHES

60 Amp.—125 Volts

No. 501	No. 502	No. 503	No. 504	No. 505	No. 506	No. 507
\$9.90	\$15.25	\$23.60	\$26.75	\$20.25	\$8.90	\$13.90

MOTOR STARTING SWITCHES

MS-1	30 Amp. 3 Pole 220 Volts Quick Make & Break Toggle.....	\$6.00
C-3P	30 Amp. 3 Pole 250 Volts Not Toggle.....	7.10

SAFE LINE SERVICE SWITCHES

No. 904	Single Pole 4 Circuits with Transformer.....	\$7.85
"	" " " without Transformer.....	6.60

INDUSTRIAL TYPE

Quick Break—Single Throw—Fused Bottom

250 Volts						
Amp.	No.	Price	No.	Price	No.	Price
30	3022	\$ 5.40	3032	\$ 6.75	3042	\$ 7.90
60	6022	8.10	6032	9.00	6042	11.65
100	10022	11.65	10032	13.30	10042	24.10
200	20022	18.25	20032	24.10	20042	39.75
400	40022	44.85	40032	61.50	40042	87.20
600	60022	78.00	60032	91.30	60042	131.10

500 Volts						
Amp.	No.	Price	No.	Price	No.	Price
30	3025	\$ 9.00	3035	\$ 8.55	3045	\$ 12.45
60	6025	9.90	6035	10.80	6045	13.30
100	10025	13.30	10035	15.80	10045	26.60
200	20025	26.60	20035	30.90	20045	43.20
400	40025	68.00	40035	74.70	40045	116.20
600	60025	96.30	60035	103.00	60045	167.70

600 Volts								
Amps.	No.	Price	Amps.	No.	Price	Amps.	No.	Price
30	3026	\$15.30	60	6026	\$15.80	100	10026	\$25.00
200	20026	\$38.60						

Not Fused—Quick Break

Amps.	Pole	Single Throw—No Fuse	Double Throw—No Fuse
30	2	250 DC 3022N \$ 5.00	3022DN \$ 10.80
30	3	250 DC 3032N 6.30	3032DN 12.45
30	3	500 AC 3025N 8.65	3025DN 13.15
30	3	500 AC 3035N 8.10	3035DN 16.60
60	2	250-500 6025N 8.10	6025DN 13.15
60	3	250-500 6035N 8.55	6035DN 16.60
100	2	250-500 10025N 11.50	10025DN 24.90
100	3	250-500 10035N 11.25	10035DN 30.70
200	2	250-500 20025N 17.00	20025DN 34.85
200	3	250-500 20035N 20.75	20035DN 50.60
400	2	250-500 40025N 49.80	40025DN 99.60
400	3	250-500 40035N 58.00	40035DN 132.80
600	2	250-500 60025N 83.00	60025DN 141.00
600	3	250-500 60035N 99.60	60035DN 163.50

S-SUNDRIES

WOOD SCREWS

Flat Head

Size	Price Per Doz.	Size	Price Per Doz.	Size	Price Per Doz.
1/4"x6 & Smaller.....	\$.05	1 1/4"x12.....	\$.07	2 1/4"x10.....	\$.08
1/2"x8.....	.05	1 1/2"x8.....	.07	2 1/2"x12.....	.09
3/4"x6.....	.05	1 3/4"x8.....	.07	2 3/4"x6.....	.07
1"x8.....	.05	1 3/4"x10.....	.07	2 3/4"x8.....	.08
1 1/8"x8.....	.05	2"x12.....	.07	2 3/4"x10.....	.09
1 1/2"x8.....	.05	2"x8.....	.08	3"x12.....	.13
1 3/4"x8.....	.05	2"x10.....	.08	3"x10.....	.10
2"x8.....	.05	2"x12.....	.09	3"x12.....	.13
2 1/4"x8.....	.06	2 1/4"x6.....	.07	3"x14.....	.15
2 1/2"x8.....	.07	2 1/2"x8.....	.07		

NOTE—For Round Head Wood Screws Add 30% to above prices.

March, 1930

PL-27

Solder

MACHINE SCREWS

Round or Flat Head

Size	Price per Dozen
1/4" x 1/2".....	Iron \$.05 Brass \$.08
1/4" x 3/4".....	.05 .09
1/4" x 1".....	.05 .10
1/4" x 1 1/4".....	.05 .12
1/4" x 1 1/2".....	.05 .12
1/4" x 1 3/4".....	.05 .12
1/4" x 2".....	.05 .13
1/4" x 2 1/4".....	.05 .15
1/4" x 2 1/2".....	.06 .20
1/4" x 2 3/4".....	.06 .22
1/4" x 3".....	.06 .23
1/4" x 3 1/4".....	.07 .29
1/4" x 3 1/2".....	.08 .36
1/4" x 3 3/4".....	.09 .40
1/4" x 4".....	.10 .45
1/4" x 4 1/4".....	.12 .50

NOTE—For Machine Screws with Fillister Head add 25% to above prices.

LAG SCREWS

Square Heads or Coach Screws

Length	2"	2 1/4"	3"	3 1/4"	4"	4 1/4"	5"	6"
1/2" Black.....	\$.03	\$.04	\$.04	\$.05	\$.05	\$.05	\$.06	\$.07
3/4" Black.....	.03	.04	.04	.05	.05	.06	.07	.07
1" Black.....	.04	.05	.05	.06	.07	.07	.07	.08
1 1/4" Black.....	.05	.06	.06	.07	.08	.09	.09	.10
1 1/2" Galv.....	.04	.05	.05	.06	.06	.07	.07	.08
1 3/4" Galv.....	.04	.05	.05	.06	.06	.07	.08	.09
2" Galv.....	.05	.06	.06	.07	.07	.08	.09	.10
2 1/4" Galv.....	.06	.07	.07	.08	.08	.09	.10	.11

STRAPS—CLIPS OR CLAMPS

For Pipe

Without Screws	Price Each	1 1/4"	1 1/2"	2"	2 1/4"	3"
Galvanized Straps, 2 Hole.....	\$.01	\$.01	\$.01	\$.01	\$.01	\$.02
Light Steel Straps, 1 Hole.....	.03	.04	.05	.07	.07	.08
Mall. Iron Clamps, 1 Hole.....	.06	.07	.08	.10	.10	.16
P & S Conduit Clamps with Bolts						
Series 1400.....	.10	.14	.18	.20		

Without Screws	Price Each	1 1/4"	2"	2 1/4"	3"
Galvanized Straps, 2 Hole.....	\$.02	\$.04	\$.05	\$.06	
Light Steel Straps, 1 Hole.....	.22	.45	.62	.70	
Mall. Iron Clamps, 1 Hole.....	.25	.45	.62	.70	
P & S Conduit Clamps with Bolts—Series 1400	.25	.45	.62	.70	

SOLDER

40-60	50-50	Resin	Ribbon	Allen
Bar or Wire	Bar or Wire	Core	30-70	Alumi-Flex
Per Pound.....	\$.70	\$.85	\$ 1.15	\$ 2.70
Per Ounce.....	.10	.10	.15	.20

SOLDER PASTE

Make	2 oz. Cans	2 oz. Tubes	4 oz. Cans	Half Pound Cans	One Pound Cans
Allen.....	\$.30	\$.40	\$.55	\$.90	\$ 1.50
Burnley.....	.20	.30	.30	.40	.70
Crescent.....	.25	.35	.35	.55	.85
G. E.....	.20	.30	.30	.40	.70
Highland.....	.20	.30	.30	.40	.70
Nokorode.....	.20	.30	.30	.40	.70
Star.....	.25	.35	.35	.55	.85

SOLDERING SALTS

1/4 Lb.	1 Lb.
Burnley..... In cans each.....	\$.40 \$.75
Yeager.....	.75 1.00
McGill Crescent..... In Bottles each.....	.85 1.00
Nokorode..... In cans each.....	.85 1.00
Allen..... In Bottles each.....	.85 1.00

SOLDER STICKS

Burnley.....	\$.20
Samson.....	.20
Allen.....	.25
Crescent.....	.25
GE.....	.25
Star.....	.25

FIXTURE STUDS

Four Prong Fixture Studs Less Bolts.....	1/4	1/2
Bolts Extra.....	\$.10 \$.15	.01 .01
No Bolt Fixture Studs.....	.10	.15

STAPLES

Staples Insulated Nails Per Dozen.....	\$.05
Leather Nail Heads Per Dozen.....	.05
Milonite Insulated Nails Per Dozen.....	.05

TAPE

FRICTION TAPE					
		Per Pound	Per Half Pound	Per 2 Ounce	Per 1 Ounce
Amazon Friction		\$.65	\$.35	\$.10	\$.05
Adhese		.65	.35	.10	.05
Bulldog		.70	.40	.10	.05
Catastact		.55	.30	.10	.05
Commodity		.60	.30	.10	.05
Dutch Brand		.60	.30	.10	.05
Everstick		.60	.30	.10	.05
Eaco		.95	.50	.15	.10
G. E.		.55	.30	.10	.05
Graybar Railway Signal		.90	.45	.15	.10
Grimshaw Friction		2.00	1.00	.25	.15
Holdfast		1.00	.50	.15	.10
Holdite		.60	.30	.10	.05
I X L		.75	.40	.10	.05
Illinois		.55	.30	.10	.05
Johns Manville Armature		1.75	.90	.20	.10
" Jomanco		1.00	.55	.15	.10
" White		1.35	.70	.20	.10
" No. 8 Now No. 5		.60	.30	.10	.05
" No. 6 " 40		.55	.30	.10	.05
Jaxon		.60	.30	.10	.05
Leader		.70	.35	.10	.05
Manson		1.30	.65	.20	.10
Magnet		.75	.40	.10	.05
O. K.		.60	.30	.10	.05
P & B.		1.00	.50	.15	.10
Perless		.60	.30	.10	.05
Service		.90	.45	.15	.10
Stanpat		.55	.30	.10	.05
Sticka		.55	.30	.10	.05
Security		.55	.30	.10	.05
Victor		.55	.30	.10	.05
Vim Grav.		1.10	.60	.15	.10

RUBBER TAPE					
		\$1.00	\$.50	\$.15	\$.10
Amazon Rubber		1.20	.60	.15	.10
Alexall		1.10	.50	.15	.10
Alpha		.60	.30	.10	.05
Brooklyn		.70	.35	.10	.05
Catastact		.70	.35	.10	.05
Dutch Brand		.70	.35	.10	.05
Elico		.60	.30	.10	.05
G. E.		.60	.30	.10	.05
Graybar Victor		1.00	.50	.15	.10
Holdfast		.60	.30	.10	.05
Imperial		.60	.30	.10	.05
Illinois		.60	.30	.10	.05
Okonite		1.65	.85	.20	.10
Para		.75	.40	.10	.05
Pittsburgh		.60	.30	.10	.05
Relio		.60	.30	.10	.05
Security		.55	.30	.10	.05
U. S. Rubber		.65	.35	.10	.05
Twin Tape Rubber & Friction		.75	.40	.10	.05
USCO Westinghouse		.90	.50	.15	.10

COUCH TELEPHONES

VESTIBULE TYPE		
No. 74 Armored Cord Receiver Type		\$25.00
No. 74A Swing Arm Receiver Type		37.30
No. 74C Cordless Loud Speaker Type		30.75
Above prices are for telephones complete but do not include for any call buttons.		
Add for buttons—Janitor Calling Buttons if fitted		\$.95
Add for Each Suite Calling Button		.95

SUITE TELEPHONES		
Series 2800 to 2849 or 1009 to 49	Page 22 Bulletin No. 89 S. H. Couch Co.	
Number of Buttons	2 0	3
Price Ea. Surface or Flush	\$11.40	\$11.40 \$12.45 \$13.60 \$14.60

TELEPHONE CABLES			
Number of Conductors	Braided Type "B"	Lead Covered Type "L"	
8	B-8 \$1.14	L-8 \$1.18	
12	B-12 .15 1/4	L-12 .21	
16	B-16 .18	L-16 .27	
21	B-21 .22	L-21 .29	
25	B-25 .24	L-25 .32	
31	B-31 .27	L-31 .39	
37	B-37 .30	L-37 .44	

TIME SWITCHES

BUCKEYE TIME SWITCHES					
	10 Amp.	20 Amp.	30 Amp.	50 Amp.	Special
Without Terminal Box	\$19.50	\$23.00	\$26.00	\$30.00	\$26.00
With " "	28.00	30.00	32.00	36.00	30.00

GENERAL ELECTRIC TIME SWITCHES					
	10 Amp.	20 Amp.	30 Amp.	50 Amp.	220 Volt
10 Amp. Indoor Only Any Cycle					\$20.00
20 " " or Outdoor—60 Cycle without Cutout					40.00
20 " " "—25-40-60 Cy. " "					41.00
Extra for Cutout on 20 Amp. Switches					4.00

HARTFORD TIME SWITCHES					
	10 Amp.	20 Amp.	35 Amp.	50 Amp.	
Type B Single or Double Pole	\$36.00	\$39.00	\$42.00	\$50.00	
Type B Triple Pole	38.00	41.00	45.00		
Type C & D Single or Double Pole	39.00	42.00	47.00	52.00	
Type C & D Triple Pole	41.00	45.00	49.00		
Type G Ant. Hall Light Control D.P.	38.00		60.00		

PARAGON TIME SWITCHES					
	10 Amp.	20 Amp.	30 Amp.	50 Amp.	
For Indoor or Outdoor Use					
Double Pole (Sunday Shut Off \$5.00 Extra)	\$40.00	\$45.00	\$47.00	\$59.00	
Triple Pole (Sunday Shut Off \$5.00 Extra)	45.00		59.00		

Transformers

RELIANCE & RACINE SWITCHES

	10 Amp.	20 Amp.	30 Amp.	50 Amp.
Racine Type 1R-2R	\$19.50	\$23.00		
Reliance Type 10-20-30-50	28.00	30.00	\$32.00	\$36.00
Reliance Type 15 Triple Pole		32.00		
Apartment House Types A-B-C-D-E-F-G 30.00		30.00		

SAUTER TIME SWITCHES

No.	Amps.	Poles	Description	Price
101	2	1	Clock operated, key wound 40 day clocks	\$ 52.00
111	10	1	" " " 40 " "	56.00
121	15	2	" " " 40 " "	60.00
201	2	1	Self winding	74.00
211	10	1	" " " "	80.00
221	10	2	" " " "	85.00
321	25	2	Motor operated self winding clocks	105.00
341	40	2	" " " "	110.00
401	100	2	Motor operated Oil Break self winding clocks	190.00
431	200	2	" " " "	250.00
461	300	2	" " " "	280.00

TORK TIME SWITCHES OR CLOCKS

Single Pole	Description	Indoor	Outdoor	Switchboard
15	125 Volt	\$115-\$20.00	\$215-\$25.00	\$015-\$19.00
Double " 30	250	\$130-25.00	\$230-30.00	\$030 24.00
Single " Double Throw		\$155-25.00	\$265 30.00	\$065 24.00
Double Pole 30 A. 250 V. Windless		\$730-60.00	\$830-65.00	\$930-58.00

Contractor and Clock Combination

#76062-60 Amp. 2 Pole A.C.	\$50.00	#75062-60 Amp. 2 Pole D.C.	\$70.00
#76102-100 " DC	75.00	#75102-100 " DC	125.00

ZENITH TIME SWITCHES

Model	10 Amp.	20 Amp.	30 Amp.	60 Amp.	100 Amp.	200 Amp.
Model #110 Closed Face	\$20.00	\$23.00	\$26.00			
8 Day						
Model #134 Open Face						
Jewel Mov. 8 Day	26.00	28.00	30.00			
Electri. Operated Type						
CTS	25.00		46.00	\$55.50	\$77.50	\$110.00
Remote Control A.C.			16.50	22.50	42.50	75.00
" DC			23.50	29.00	55.00	93.00

NOTE—Add \$2.00 For Model 110 with Open Face Visible Dial.
3.00 " " 110 for Weatherproof Cabinet.

TRANSFORMERS

BELL & TOY TRANSFORMERS

Name	Style	Watt	Secondary	50 to 133 Cycle	25 to 40 Cycle	Price
ED-WARDS	Steel Clad Bell	25	Single	86 \$1.25	86 \$1.45	
	" "	25	Three	86T 1.55	86T 1.75	
	Porcelain Bell	25	Single	87 1.55	87 1.75	
	Out. Box Bell	25		86ER 1.55	86ER 1.75	
	Heavy Duty	50	8-16-24	88 4.25	88 4.65	
	" "	75		89 6.40	89 7.00	
	" "	100		90 7.40	90 8.15	
	Toy	80	3 to 18	870 3.50	870 4.30	
	" "	75	3 to 24	871 5.55	871 7.00	
	" "	100	2 to 30	872 8.75	872 10.50	

G. E.	Bell Residence	12 Volt	2332	1.00	192340	1.45
	Box Type	12	2485	1.40	2490	1.75
	Heavy Duty	50	2333	4.85	2339	7.00
	" "	100	2334	6.95	2340	11.20

Wizard	25	10 Volt	230-101	1.25	230-102	1.40
Nacode	25	10 Volt	230-111	1.40	230-112	1.65
Tri-Volt	25	6 to 18V.	230-121	1.40	230-122	1.65
Porcelain	50	5 1/2-13	535-101	3.65	535-102	4.30
Little Jeff Toy	75	5 1/2-22	535-121	4.45	535-122	5.50
Midgett Toy	100	5 1/2-23	535-131	6.75	535-132	8.40
Model 2 Toy	130	1-30	535-141	8.65		
Heavy Duty A	50	6 to 20	231-101	5.10	231-102	7.25
" B	75	6 to 20	231-111	7.70	231-112	10.30
" C	125	6 to 24	231-121	10.25	231-122	12.80
" E	250	6 to 24	231-141	21.00	231-142	26.40

Blue Bell	10	8 Volt	6166	1.25		
Tri-Volt	20	6 to 16	6163	1.40	6126	1.65
Box Type	10	8 Volt	7166	1.40		
Porcelain Case	10	8 Volt	4166	1.40		

Mold. Single	25	10 Volts	221	1.40		
Mold. 3 Circuit	25	6 to 18V.	222	1.55		
Steel Syle. Cir.	25	10 Volts	225	1.25	235	1.35
Steel 3 Circuit	25	6 to 18V.	226	1.40		
Cov. Ty'e Sale. Cir.	25	10 Volts	227	1.40	237	1.55
Cov. Type 3 Cir.	25	6 to 18V.	228	1.55		

Greyhound	25	8 Volt	L-160	1.20	L-125	1.35
Type A	25	8 Volt	A-100	1.30	A-125	1.45
Tri-Volt	25	6-8-14 V.	A-1360	1.50	A-1325	1.75
Porcelain	25	8 Volt	AP-160	1.40	AP-125	1.65
Box Type	25	8 Volt	OB-160	1.40	OB-125	1.65
Toy Junior	50		50	3.30	50	4.00
Genesse	75		75	4.95	75	6.00
Senior	100		100	6.60	100	8.00
Niagara	150		150	8.80	150	10.60

TB H'vy Duty	50	8-16-24	501	4.25	502	4.75
TB H'vy Duty	75	8-16-24	751	6.40	752	7.00
TB H'vy Duty	100	8-16-24	1001	7.40	1002	8.15
TB H'vy Duty	150	8-16-24	1501	9.10	1502	10.00
TA H'vy Duty	50	12-18-30	501	6.20	502	6.85
TA H'vy Duty	100	12-18-30	1001	9.30	1002	12.40
TA H'vy Duty	200	12-18-30	2001	24.75	2002	30.95
TA H'vy Duty	300	12-18-30	3001	30.95	3002	36.30

NOTE: For 220 Volt Transformers add 20% to above prices.

ELECTRICAL CONTRACTING

Wires

Wires

WIRES

NEW CODE RUBBER COVERED WIRES

Special Price on No. 14 S.B. Wire

In less than Coil Lots	Per Foot
In Coil Lots	\$.01½
Other Sizes	
Fixture Wire Light	No. 18 No. 16 No. 14
" Heavy	\$.01½ \$.01½ .01½
Solid Single Braid	.01½ .01½ See Above
" Double	.01½ .01½ .02
Stranded Sgle. Braid	.01½ .01½ .02
" Dble.	.02½ .02½ .02½
Duplex Single Braid	.04 .04
" Double	.05 .05
Other Sizes	
Fixture Wire Light	No. 12 No. 10 No. 8 No. 6
" Heavy	
Solid Single Braid	\$.02 \$.03 \$.04 \$.06½
" Double	.02½ .03½ .04½ .07
Stranded Sgle. Braid	.02½ .03½ .05 .07
" Dble.	.03 .03½ .05½ .07½
Duplex Single Braid	.05 .06 .08½ .13
" Double	.06 .07 .09½ .14

LARGER SIZES DOUBLE BRAID STRANDED

Size	Price Per Foot	Size	Price Per Foot
No. 8 D. B.	\$.08½	No. 0	\$.27
No. 6 D. B.	.07½	No. 00	.27
No. 4 D. B.	.10½	No. 000	.33
No. 3 D. B.	.12	No. 0000	.40
No. 2 D. B.	.13½	250,000	.48
No. 1 D. B.	.19		

CIRCULAR MILL CABLE

Size	Price Per Foot	Size	Price Per Foot
300,000 C. M.	\$.67	700,000 C. M.	\$1.27
350,000 C. M.	.66	750,000 C. M.	1.36
400,000 C. M.	.74	800,000 C. M.	1.45
450,000 C. M.	.83	900,000 C. M.	1.60
500,000 C. M.	.90	1,000,000 C. M.	1.77
600,000 C. M.	1.10		

Additions to Code Wire for 25% (Intermediate Grade) and 30% Wire.

Sizes	For Intermediate or 25% Wire	For 30% Wire
From No. 14 to No. 1	5%	10%
From No. 1 to 4 0.	3%	6%
From 250,000 to 400,000 CM.	3%	5%
From 500,000 to 1,000,000 CM.	1½%	3%

WEATHERPROOF WIRE

Triple Braid

	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Per Foot Solid	\$.64	\$.60	\$.61	\$.59	\$.55	\$.51	\$.50
" Stranded	.63	.59	.60	.58	.54	.50	.49
Per Foot Solid	.01	.01½	.02	.02½	.03	.04	.04
" Stranded	.01½	.01½	.02½	.03	.03½	.04½	.04½
Number Feet Per Pound	90	70	40	30	20	13	

EXTRAS—For slow burning W. P. Wire—Per Pound Extra. .01
 For Twisted Pair W. P. Wire—Per Pound Extra. .02
 For Double Braid W. P. Wire—Per Pound Extra. .01
 For Medium Hard Drawn—Per Pound Extra. .00½
 For Armored Cables See Page PL-9.

ANNUNCIATOR—TELEPHONE WIRE, ETC.

Description	No. 18	No. 16	No. 14	No. 12
Single	Per Pound. .70	.68	\$.65	
Twisted or Duplex	Per Foot. .01	.00½	.01½	
Per Foot. .01	.01½	.02	.03	
Office & Damp Proof Wire				
Single	Per Pound. .80	.75	.70	
Twisted or Duplex	Per Foot. .85	.80	.74	
Per Foot. .02	.03	.04		
"Deltabeston" or similar				
Single Stranded Black Per Foot	.03	.03½	\$.04	\$.05
Single Stranded Colored Per Foot	.04	.04	.05	.06
Single Glazed Cotton Per Foot	.04	.04	.05	.07
Single Artificial Silk Per Foot	.04½	.05	.05½	.08
Duplex Glazed Cotton Per Foot	.08	.09	.10	
Duplex Artificial Silk Per Foot	.09	.10	.11	
Twisted Pair Glazed Cotton Per Foot	.08	.09	.10	
Twisted Pair Artificial Silk Per Foot	.09	.10	.11	
Asbestos Range Wire				
Description	No. 18	No. 14	No. 12	No. 10
Single Solid—Per Foot	\$.08	.10	.11	.15

COVERED TELEPHONE WIRES

	Per Foot
No. 22—½	Twin Pair Plain Pothead Copper Wire. .03½
No. 22—½	Twin Pair Flame Proof Copper Wire. .04
No. 22—½ & S	Twin Pair West. Elect. Flameproof Jumper Wire (Enam). .06
No. 19—½	Twin Pair Flame Proof Copper Wire. .04
No. 19—½	Twin Pair Dry Braid Interior Copper Wire (Olive). .03½
No. 18—½	3 Conductor Ditto. .05
No. 18—½	Twin Pair, Bridlewire, Saturated Braid. .03½
No. 14—½	Twin Pair Outside of Bridle Saturated Braid. .06

Note—For Prices of Sgle. Conductor use ½ of above prices per foot.

GALVANIZED TELEPHONE WIRE

Size BWG	No. 4	No. 6	No. 8	No. 10	No. 12	No. 14
EBB Extra Best	Per Pound. .13	.13	.13	.13	.14	.15
B. B. Best Best	.12	.12	.12	.12	.13	.14
Steel	.11	.11	.11	.11	.12	.13
Weight Per 1000 Feet	153	112	74	49	32	19
Weight Per Mile	811	590	390	258	170	99

WIRE, MAGNET

Price Per Pound

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel-ed Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$.83	\$.86			\$.83	\$.87	\$.88
10	.84	.87			.84	.88	.89
12	.85	.88			.85	.89	.90
14	.88	.93			.86	.91	.95
16	.89	.95	\$1.30	\$1.40	.87	.95	1.10
18	.93	1.02	1.35	1.60	.91	.99	1.20
20	1.00	1.11	1.50	1.80	.93	1.08	1.23
22	1.10	1.17	1.60	1.90	.95	1.11	1.30
24	1.13	1.34	1.70	2.15	.98	1.21	1.40
26	1.26	1.50	1.80	2.25	1.04	1.36	1.70
28	1.42	1.73	1.95	2.70	1.13	1.56	2.00
30	1.90	1.90	2.70	3.60	1.21	2.05	2.25
32	2.08	2.84	3.40	5.00	1.52	2.36	3.05
34	2.66	3.98	4.40	6.70	1.71	2.90	4.20
36	3.40	4.50	5.90	8.40	2.10	4.50	5.15
38	5.50	7.80	8.60	14.00			
40	7.90	11.50	14.10	19.85			

NOTE: For odd sizes use half the increase of next larger size.

For ¼ lb. lots use one third of above prices.

For one ounce lots use one tenth of above prices.

Price Per 100 Feet

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel-ed Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$4.50	\$5.90			\$4.20	\$4.90	\$5.05
10	2.75	2.90			2.60	2.90	3.00
12	1.85	2.00			1.70	2.00	2.00
14	1.60	1.80			1.60	1.90	1.95
16	.92	.95	\$1.10	\$1.20	.90	.95	1.15
18	.60	.65	.70	.82	.50	.65	.82
20	.45	.50	.58	.65	.40	.50	.65
22	.33	.38	.42	.45	.30	.40	.45
24	.24	.28	.32	.37	.20	.30	.37
26	.15	.17	.20	.25	.13	.17	.20
28	.10	.15	.15	.20	.10	.15	.18
30	.10	.12	.12	.15	.10	.12	.15
32	.10	.12	.12	.14	.10	.12	.14
34	.10	.12	.12	.14	.10	.12	.14
36	.10	.12	.12	.14	.10	.12	.14
38	.10	.12	.12	.14	.10	.12	.14
40	.10	.12	.12	.14	.10	.12	.14

Note: Prices per 100 feet are higher than per pound rate to cover cost of measuring and should be used only for small lot sales.

LEAD & RUBBER COVERED WIRE AND CABLE

Size	Single Conductor	Duplex	Three (3) Conductor
No. 14	Price Per Foot	\$.06	\$.07
No. 12	" "	.06½	.08
No. 10	" "	.09	.10
No. 8	" "	.11	.12
No. 6	" "	.18	.19
No. 4	" "	.22	.23
No. 2	" "	.25	.26
No. 1	" "	.30	.31
No. 1/0	" "	.36	.37
No. 2/0	" "	.42	.43
No. 3/0	" "	.47	.48
No. 4/0	" "	.54	.55
250,000 C. M. Cable		.63	.64
300,000 C. M. " "		.78	.79
350,000 C. M. " "		.88	.89
400,000 C. M. " "		.99	1.00
500,000 C. M. " "		1.08	1.09
600,000 C. M. " "		1.28	1.29
700,000 C. M. Cable		1.58	1.59
750,000 C. M. " "		1.77	1.78
800,000 C. M. " "		1.89	1.90
900,000 C. M. " "		2.00	2.01
1,000,000 C. M. " "		2.20	2.21

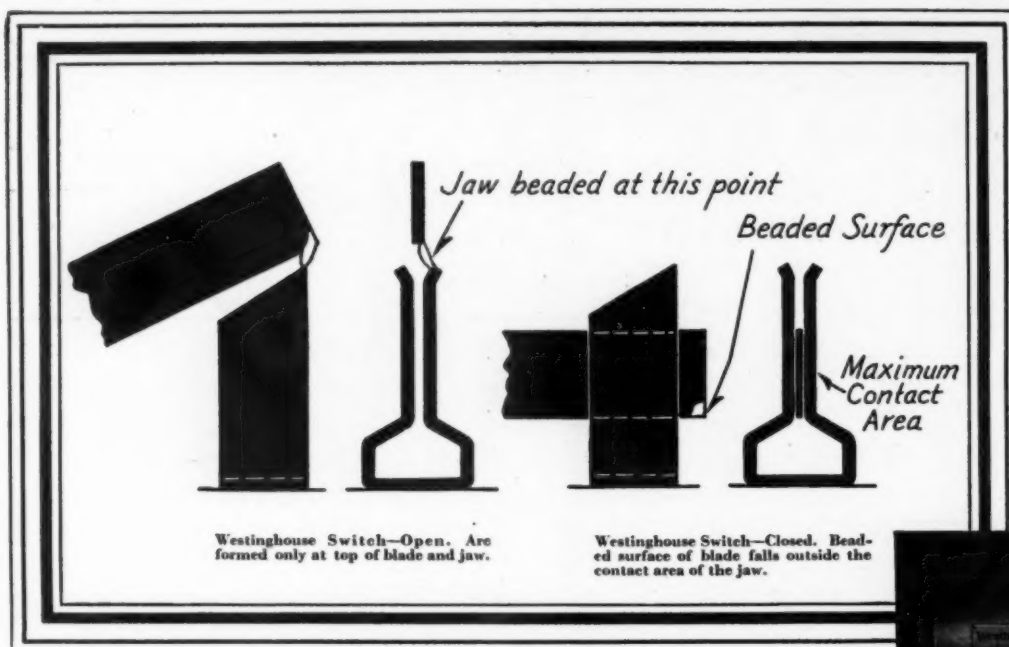
NOTE: Above prices are based on following quantities:

No. 16 to No. 8 Less than 100 ft. No. 6 and larger less than 50 ft.

PARKWAY CABLES

Size	Steel Taped	Non-Metallic
No. 14 per ft.	2 Cond. \$.33	3 Cond. \$.45
No. 12	.36	.56
No. 10	.41	.66
No. 8	.48	.74
No. 6	.56	.78
No. 4	.70	1.07
No. 2	.88	1.35
No. 1	1.14	1.68
No. 0	1.27	1.88

NOTE: Prices on Parkway Cables are based on Trade costs in quantities of less than 100 Feet. Larger quantities take lower prices. Consult your jobber.



The Diamond Pointed Jaw gives a longer switch life

THE diagram shows how . . . and why the diamond pointed jaw and extended blade on Westinghouse Industrial Safety Switches prevent beading and burning of the jaw and blade, and give a cleaner, better contact. This better contact means that the temper of the jaw cannot be affected by overheating. It means an increased useful life of the switch.

The quick-make, quick-break mechanism; the arc quencher that quickly and effectively extinguishes the arc before it can damage the switch or endanger the operator; the simplicity of the Westinghouse design; and the facilities that assure prompt delivery of standard safety switches; also, contribute to the ever increasing popularity of the Westinghouse line.

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

T 31009-A



New Officers for San Francisco League

The following officers were elected for the San Francisco Electrical Development League at its annual meeting on February 10: Ernest Ingold, Ernest Ingold, Inc., president, and W. A. Cyr, *Electrical West*, secretary-treasurer. The board of directors are: Ernest Ingold; W. A. Cyr; George C. Tenney, *Electrical West*; Charles L. Huyck, Graybar Electric Co., and William R. Marshall, Westinghouse Electric & Manufacturing Co.

* * *

Palm Beach Officers

New officers for the Palm Beach County Chapter of Electragists were elected in January, all from West Palm Beach, as follows:

President: Arthur Hamilton, Jr.
1st Vice-President: A. M. Terry.
2nd Vice-President: J. R. Hine.
Secretary: W. E. Tunnicliff.
Treasurer: J. A. Harper.



PRESIDENT CALIFORNIA ELECTRAGISTS:—Glenn E. Arbogast, president and general manager of the Newbery Electric Corporation, Los Angeles, Calif., has been elected state president of the California Electragists. In 1903 Mr. Arbogast went to Los Angeles from Iowa, at which time he became associated with the F. E. Newbery Electric Company, filling various positions until 1921 when he was made president and director of the Newbery Electric Corporation. Mr. Arbogast has always been very active in the electrical industry and for many years was president of the Electrical Contractor-Dealers Association, which later became known as the Los Angeles Section of the California Electragists. He also is director of the Crystalite Products Corp., Glendale, and the Permoid Process Co., Los Angeles, as well as president and director of the Interstate Securities Corp., Los Angeles. He was recently elected president of the Eagle Rock Chamber of Commerce for the third time, and is serving as a member of the advisory committee of the California Electrical Bureau.



In Pittsburgh

These jobbers will supply you with STEEL CITY products

Doubleday-Hill Electric Co.
Graybar Electric Co., Inc.
Iron City Electric Company
Keps Electrical Supply Co.
W. T. McCullough Electric Company
Pittsburgh Electric & Mfg. Co.
Price Electric Company
Robbins Electric Company

Convenience Outlets

Standard Package of 50. List price 70c each. Best for show windows and cases, base boards, mantles, etc. . . . Only three parts—the cover—the receptacle and the box body. The box is equipped with a cord grip device for holding armored cable. This new Service X-IT is the smallest, neatest, simplest and the latest word in convenience. Easy to install and you will save money by adopting it as standard.

SERVICE X-IT No. 494



Steel City Electric Co.

PITTSBURGH, . . . PA.

SHERMAN

Electrical Goods



**A Complete
Standardized line
for Contractors**



**All reliable
and they cost no more**

Thirty-five years in building up our line to meet your every requirement. . . . Order today from your jobber, or write us direct giving us his name.

H. B. SHERMAN MFG. CO.
Battle Creek, Michigan

SHERMAN
HEADQUARTERS FOR
**LUGS - TERMINALS
AND CONNECTORS**



TEAM WORK ON FIXTURE SALES:—Geo. H. Lane, Waco, Tex., makes a business of wiring cottages and apartments. He sells the fixtures with 75 percent of his jobs. In this he is aided materially by Jewel Anders, his office assistant, who does a real selling job and has a large acquaintance among the women buyers of Waco. Mr. Lane is quite active in association work in his city.

Northern Utah Chapter Opens Office

The Northern Utah Chapter, with a membership exceeding 30 electragists in Salt Lake City, Brigham, Ogden and Logan, has announced the employment of R. W. Davis as executive secretary with offices at 323 Felt Building, Salt Lake City.

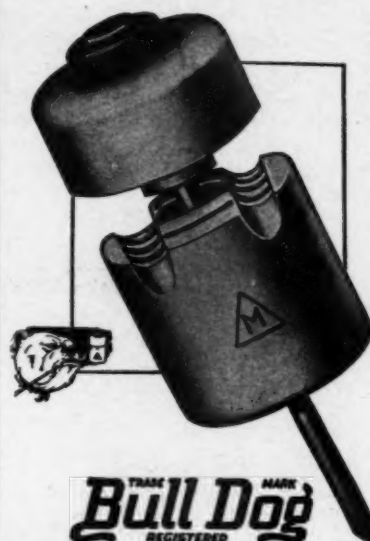
Mr. Davis reports conditions affecting electragists in this district to be improving steadily, with the outlook for a prosperous year of business and development of the chapter's usefulness to its members and the community.

Motor Section Chairman Visits Pacific Coast

Following the A.E.I. Motor Section meeting at Milwaukee early in February, Chairman Louis Kalischer visited a number of electragist chapters, extending his trip over several weeks to include stops at Los Angeles and San Francisco where motor specialist sections have been continuously active since 1927.

In Los Angeles the motor specialists called a special meeting at the Chamber of Commerce, inviting representatives of motor manufacturers and of the chamber to hear Mr. Kalischer outline the industrial re-motorization movement. The more than thirty key-men in attendance were enthusiastic in their reception of the ideas presented, and promptly arranged to bring to-

"It has a grip like its namesake"



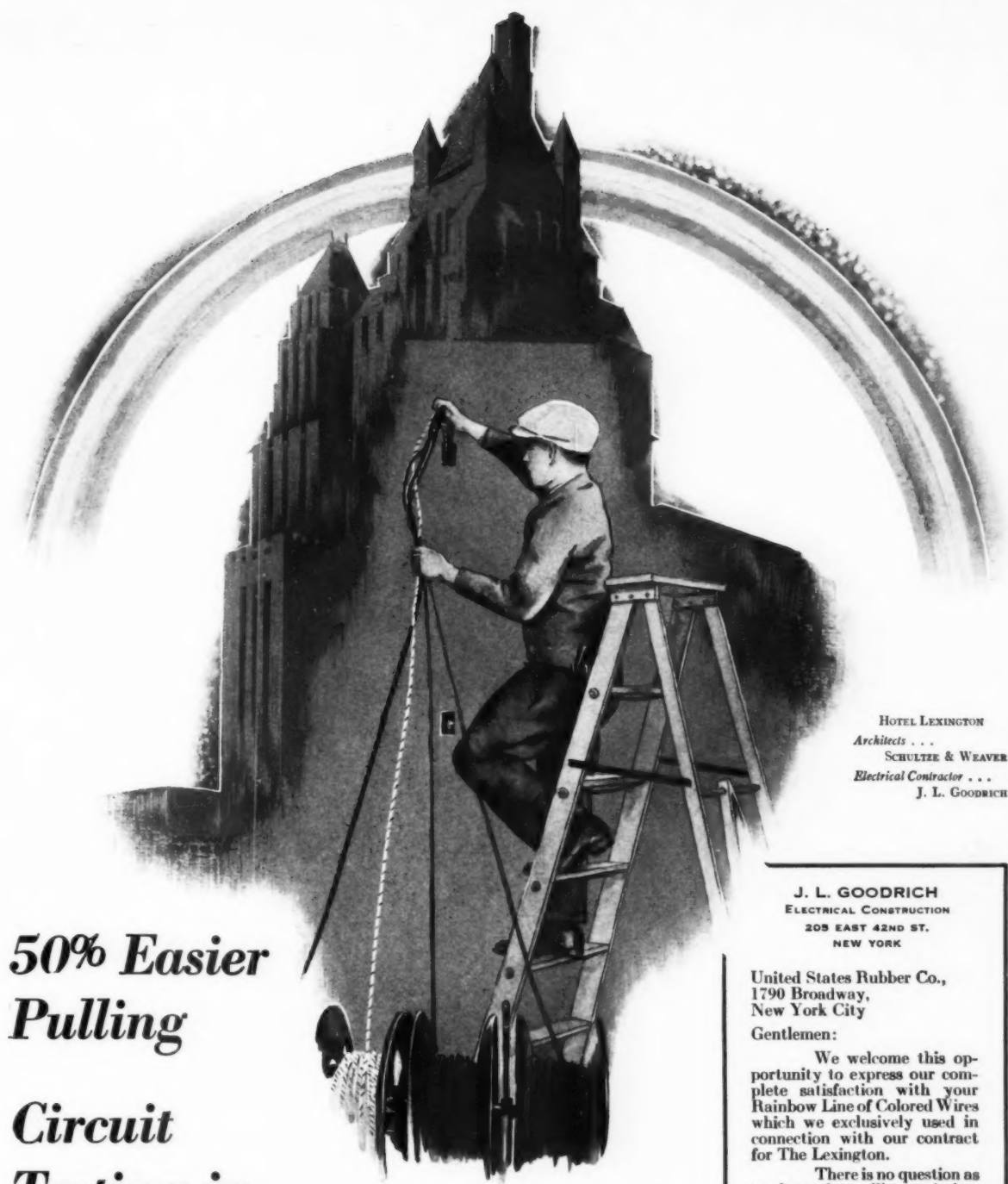
Split Knobs

THESE are the safe, approved knobs for all types of residence wiring. They mean better jobs at no added cost. Bull Dog Split Knobs, together with Illinois Porcelain Tubes, Cleats and Solid Knobs form a complete line of standard porcelain.



Sold Through Wholesalers

Illinois Electric Porcelain Co.
Macomb, Illinois



**50% Easier
Pulling**

**Circuit
Testing in
one-third
the time**

We'll gladly serve you
through your jobber



United States Rubber Company

1790 BROADWAY • NEW YORK
BRANCHES IN EVERY INDUSTRIAL CENTER

HOTEL LEXINGTON
Architects . . .
SCHULTZ & WEAVER
Electrical Contractor . . .
J. L. GOODRICH

J. L. GOODRICH
ELECTRICAL CONSTRUCTION
205 EAST 42ND ST.
NEW YORK

United States Rubber Co.,
1790 Broadway,
New York City
Gentlemen:

We welcome this opportunity to express our complete satisfaction with your Rainbow Line of Colored Wires which we exclusively used in connection with our contract for The Lexington.

There is no question as to the easier pulling and time saved in circuit testing. This labor saving in dollars and cents is directly proportional to the size of the wiring job and multiplicity of wire systems involved.

Yours very truly,
J. L. GOODRICH
By M. A. Eisenstadt

"U. S." RAINBOW WIRES



THE CHRYSLER BUILDING
New York City
EDWARDS EQUIPPED THROUGHOUT

If Edwards
signaling devices
were installed
in this, the tallest
of all buildings
where guarantee
and reliability
meant thousands
of dollars
Isn't it logical that
Edwards
means relatively as
much on any job?
It is
It does

The Only Complete Line of Signaling Devices



EDWARDS^{and} COMPANY

140th and Exterior Streets INC. New York City

Atlanta, Ga.	Dallas, Texas	New Orleans, La.
Baltimore, Md.	Denver, Colo.	Philadelphia, Pa.
Boston, Mass.	Detroit, Mich.	Pittsburgh, Pa.
Chicago, Ill.	Los Angeles, Calif.	Seattle, Wash.
Columbus, Ohio	Minneapolis, Minn.	San Francisco, Calif.

EDWARDS^{and} COMPANY OF CANADA

LIMITED

Toronto, Ont., Canada	Winnipeg, Man., Canada
Vancouver, B. C., Canada	Montreal, Canada
Montreal, Que., Canada	

gether in a larger meeting the same week industrial members of the Chamber of Commerce and representatives of manufacturers and power companies for further discussion of the plan.

Mr. Kalischer reports a growing interest in the work of the Motor Section in all the cities visited and encouraging prospects for a substantial organization program. In proposing the re-motorization movement as the major Motor Section activity for the year, he has emphasized the need for a large number of organized motor specialists chapters or sections to make the work more effective.

* * *

Cincinnati Contractors Elect Officers

The Electrical Contractors' Division of the Cincinnati Electric Club has elected the following officers for 1930: Henry Moorman, president; Wm. H. Dimmett, vice president; Arthur Bertke, second vice president, and J. F. Riehle, secretary-treasurer. The board of governors are E. W. Edmonds, Sam Keller,



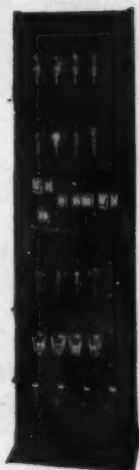
Henry T. Moorman

H. Harrell, E. S. Kerchner, Martin Wehr, Fred Connor, Thomas Donnelly, Edward Fogarty, Thomas Gleason and Fred Hittinger.

J. M. McCarthy, business manager, has opened up a credit bureau and collection department for the use of members. Quite a few of the members are using this bureau for credit ratings and also for the collection of bad accounts long past due.

Many interesting things have been

HERE IT IS



Grab it!

DON'T be satisfied with just "getting by." Take advantage of this real opportunity.

A new world for the electragist is opening its gates. Enter this new and anxious market for sound system installations.

Theatres, dance halls, auditoriums, stadiums, train and bus terminals, and over fifty more actual fields . . . as yet hardly scratched. All there for you.

Just think of it, if you can qualify, there's a golden opportunity to obtain a distributor-contractor franchise with territorial protection. We know our business and can teach you. This is one of the oldest and most experienced organizations of audio engineering of its kind.

So sit down right now and write for your copy of "Amplified Opportunities."

LIST OF MARKETS

Hotels	Steam Ships	Civic Centers	Apartment Houses
Theatres	Fair Grounds	Restaurants	Railway Terminals
Schools	Skating Rinks	Dance Halls	Excursion Boats
Stadiums	Hospitals	Amusement Parks	Community Houses

Radio Receptor Company, Inc.
108 Seventh Ave., New York City

*Licensed by Radio Corporation of America
and Associated Companies*

POWERIZER SOUND SYSTEMS

(EC-1-35)

CARRY A

Test-O-Lite

In Your Pocket — ALWAYS

NEW! — and the **FIRST** practical tester covering from
100 to 550 Volts A. C. or D. C.

It's a Trouble Finder!

TEST-O-LITE, with its tiny Neon lamp, instantly detects trouble in electrical circuits, locates burnt-out fuses, light and motor troubles, faults in electrical appliances, auto spark plugs and radio sets.

Small and Convenient As a Fountain Pen
Lasts A Lifetime

Indispensable To
Electricians, Engineers, Building Superintendents, Home Owners

TEST-O-LITE is the product of the makers of STORM KING LIGHTNING ARRESTERS and SOLDERALL.

LIST PRICE \$1.50

L. S. BRACH MFG. CORP.
Specialists In Electrical Protective Devices for 24 Years
Newark, N. J., U. S. A. • • Toronto, Canada







WHAT EVERY ELECTRICIAN WANTS TO KNOW!



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FOR
PROFIT**

Announcing: "Audels New Electric Library."

New and More uses for Electricity offer great opportunities to men who can handle this power correctly and accurately.

"Audels New Electric Library" is a NEW practical and theoretical course for home study and ready reference. Here are the answers to your questions, giving you the real dope that every electrician must know.

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Beautiful, timely books for service—pocket-size, flexible; completely illustrated; simplified, easy to read and understand. No electrical man can afford to pass up this opportunity. Extremely low price; Send This Coupon Today!

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EASY
AS ABC**

Latest, exact information, illustrated, covering—

Magnetism, Armature Winding, Dynamos, D-C Motors, Maintenance, Trouble Shooting, Tests, Storage Battery, Alternating Current, Power Factor, Transformers, A-C Motors, Windings, Converters, Switches and Fuses, Relays, Condensers, Rectifiers, Meters, Power Station Practice, House Light and Power Wiring, High Tension, Calculations, Code, Electric Railways, Elevators, Gas Engines, Auto and Aero Ignition, Radio, Telephone, Telegraph, Motion Pictures, Talkies, Lighting, Electric Refrigeration, X-Ray, Welding, Pumps, Compressors, Appliances, An Electric Calculator, Practical Mathematics, A New Electric Dictionary and Encyclopedia of Words.

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☐ PLAN 1—ONE BOOK A MONTH

Please enter my subscription to "Audels New Electric Library" to consist of twelve volumes, price \$1.50 a volume (\$10.50 for the seven volumes now ready). Mail one volume each month and as they are received, I will mail you \$1.50 promptly.

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Please ship me for one week's free trial the first seven volumes of "Audels New Electric Library," \$1.50 each (\$10.50 for the seven volumes now ready). The remaining five volumes to be mailed as issued at \$1.50 a volume. If satisfied, I will mail you 50c or more each week as payment for the first seven books and I will pay for the last five numbers as I receive them at \$1.50 each.

THEO. AUDEL & CO., 65 West 23rd St., New York
Please ship me the NEW "Audels Electric Library" on the plan marked (X).

NAME

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OCCUPATION

EMPLOYED BY. EC

planned for 1930, all of which will help the individual contractor to increase his profit.

* * *

Johnson Heads Portland Electragists

The Portland, Ore., Association of Electragists elected its 1930 officers as follows: Arthur R. Johnson, of the M. J. Walsh Electric Co., president; Roy C. Kenney of NePage, McKenny Co., vice president and John R. Tomlinson of the J. R. Tomlinson Electric Co., secretary-treasurer.

The association members are very enthusiastic about business conditions for 1930 and the attendance of meetings is better than ever.

* * *

Definition of "Sub-Standard"

What does sub-standard mean when applied to electrical workmanship and materials? The Metropolitan League of Boston is making an extensive campaign to educate the public as to the value of proper electrical goods and installations through the medium of newspaper advertising, radio broadcasting, etc. In addition, the League has sent out a questionnaire requesting the members to give their definition of the term "sub-standard" in order that the public may be advised as to just what the term means.



OPERATED FIRST LIGHT PLANT IN HOUSTON:—L. E. Miller, who at present leans toward residence and commercial wiring, has been an electrical contractor in Houston, Tex., since 1890. Still farther back, in 1882, he operated the first electric light plant installed in the city.

◆◆◆More Business◆◆◆ In A Profitable Field For The Electrical Contractor

Go after this
Growing and
Profitable
Business of
Lighting up
Both the
Interior and
Exterior of
Automobile
Super
Service
Stations



Benjamin advertising is carrying the message of lighting-up to attract the passing motorist and afford him greater safety and convenience, at the same time increasing the efficiency of the station attendants, in the dominant business publications reaching the entire field of marketing gasoline, oil, grease and other automotive services.

Send for Special
Information on the
Emblem Sign Reflector
Pit Lighting Unit
Elliptical Angle
Reflector

BENJAMIN ELECTRIC MFG. CO.

General Offices and Factory:

DES PLAINES (Chicago Suburb) ILLINOIS

Divisional Offices and Warehouses:

347 W. 17th St., NEW YORK

111 N. Canal St., CHICAGO

448 Bryant St., SAN FRANCISCO



SEND COUPON
BELOW FOR PRICES
AND DETAILED
INFORMATION ON
TURNER
BLOTORCHES

The pump is a vital and important part of a blow torch. Pumps that are built in Turner Blotorches are themselves a time-saving feature.

MORE EFFICIENCY—The pump on a Turner Blotorch delivers more pounds of pressure per stroke.

SELF LUBRICATED WASHER (B) contains petroleum jelly which keeps leather soft and pliable.

SELF-FORMING CAP—Plunger pulls up into cap (A) forming the leather for insertion into the cylinder (C).

MASTER THE TURNER No. 45

In name and in performance the Turner No. 45 is the Master. It is a tool that everyone likes the moment they see it.



TURNER KEROSENE
No. 45 GASOLINE

Has automatic safety valve.

Orifice cannot become enlarged. Adjusting needle is separated from shut-off.

Small wheel handle on adjusting needle prevents undue leverage.

Air adjusting tube provides correct entrainment of air for any gravity fuel.

Send Coupon Below for more complete information

THE TURNER BRASS WORKS,
813 Park Ave., Sycamore, Ill.
(Western Branch—324 No. San Pedro
St., Los Angeles, Cal.)

Please send us discounts on Turner Blotorches illustrated above.

Name.....
Address.....
Town.....State.....
My Jobber is.....

TURNER

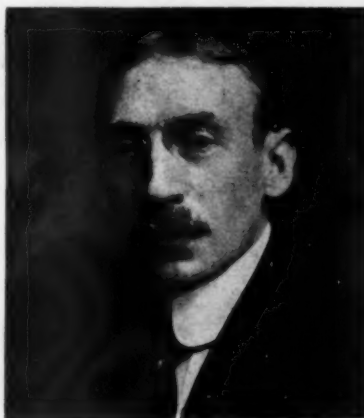
L. C. Phillips

L. C. Phillips of Cheyenne, Wyo. died January 27. Besides being a well-known contractor in Cheyenne, Mr. Phillips specialized in electrical installation work in air mail towers, having made government air mail tower electrical installations in several western states.

Charles J. Sutter Dies

Charles J. Sutter, one of the organizers and a charter member of the Association of Electragists, died at his home in St. Louis on February 8.

At the time when the wiring industry was young Mr. Sutter was one of the leading promoters of association work. He was instrumental in forming the first union of wiremen which became the nucleus for the present I.B.E.W. and



Charles J. Sutter

which today is known as Local No. 1. Mr. Sutter served as its first treasurer and was a delegate at the convention where the brotherhood was formed.

Mr. Sutter entered the electrical business at the age of 17, with a manufacturer of electric bells and a.c. series incandescent light installations. It was not until 1893 that he became an electrical contractor, in which occupation he had engaged ever since. He soon became a member of the St. Louis Electrical Exchange, the oldest contractors' association in United States, having been established in 1892, and later served as secretary and then as president of this organization. He was prominent in national associa-



CHRYSLER BUILDING IN
NEW YORK CITY

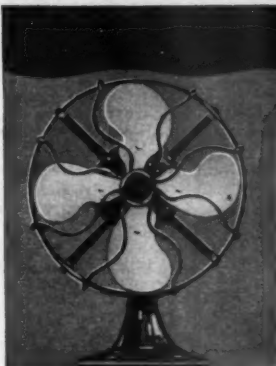
WORLD'S TALLEST BUILDING PROTECTED WITH "GALVADUCT" CONDUIT

NEW YORK—Breaking all time world's records by thirty feet, the new Chrysler Building, when the peak of the structure rose 1,030 feet in the air. The Eiffel Tower, Paris, had held the record for twenty-nine years at 1,000 feet.

Much credit is due William Van Alen, Architect; Robert T. Lyons, Inc., Supervising Architects; Fred T. Ley & Co., Inc., General Contractors; Hatzel and Buehler, Inc., Electrical Contractors; Munroe Lamp and Equipment Co.; and Garland Mfg. Co., who furnished "Galvduct" Rigid Steel Conduit for the protection of the entire wiring system.

Garland Mfg. Co.
Pittsburgh Penna.

THERE'S AN EMERSON DISTRIBUTOR NEAR YOU TO SERVE YOU PROMPTLY ALL SUMMER



Akron, Ohio
Summit Chandelier Co.

Albany, Ga.
Albany Hdw. & Mill Supply Co.

Albany, N. Y.
Albany Hardware & Iron Co.
Esco Electric Supply Co.

Albuquerque, N. M.
Chas. Ilfeld Co.

Allentown, Pa.
Elliott-Lewis Electrical Co., Inc.

Amarillo, Texas
Nunn Electric Co.

Atlanta, Ga.
Capital Electric Co.
Peaslee-Gaulbert Co. of Ga., Inc.

Baltimore, Md.
Lee Electric Co.

Beaumont, Texas
Neches Electric Co.

Binghamton, N. Y.
Crocker & Ogden Co.
Southern N. Y. Elec. Supply Corp.

Birmingham, Ala.
Wimberly & Thomas Hdw. Co., Inc.

Boston, Mass.
Sager Electrical Supply Co.
George H. Wahn Co.

Brockton, Mass.
Sager Electrical Supply Co.

Brooklyn, N. Y.
Parr Electric Co., Inc.

Buffalo, N. Y.
H. I. Sackett Electric Co.

Cambridge, Mass.
Sager Electrical Supply Co.

Canton, Ohio
The Electric Sales Co.

Chattanooga, Tenn.
Motor Supply Co.

Chicago, Ill.
Manhattan Elec'l Supply Co., Inc.
Revere Electric Co.
Steiner Electric Co.

Cincinnati, Ohio
The F. D. Lawrence Electric Co.

Cleveland, Ohio
The Allen Electric Co.
Davis, Hunt, Collier Co.
Milner Electric Co.

Columbus, Ga.
Butler Brothers, Inc.

Columbus, Ohio
Smith Bros. Hardware Co.

Dallas, Texas
The Electric Specialty Co.
Smith-Perry Electric Co.

Davenport, Iowa
Republic Electric Co.

Denver, Colo.
The New England Electric Co.

Des Moines, Iowa
Brown-Camp Hardware Co.
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Detroit, Mich.
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Miller-Seldon Electric Co.

Duluth, Minn.
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Elmira, N. Y.
Southern N. Y. Elec. Supply Co.

El Paso, Texas
Zork Hardware Co.

Evansville, Ind.
Boetticher-Kellogg Co.

Fort Smith, Ark.
Atkinson-Williams Hdw. Co.

Fort Worth, Texas
Miller Electric Co., Inc.

Hagerstown, Md.
Schindel, Rohrer & Co., Inc.

Harrisburg, Pa.
Elliott-Lewis Electrical Co., Inc.

Hartford, Conn.
The Hartford Elec. Supply Co.

Hastings, Nebr.
W. M. Dutton & Sons Co.

Holyoke, Mass.
The Roland T. Oakes Co.

Houston, Texas
Roberts Empire Electric Co.

Indianapolis, Ind.
Meier Electric & Machine Co.

Jacksonville, Fla.
Perdue Office Furniture Co.

Jersey City, N. J.
Parr Electric Co., Inc.

Joplin, Mo.
Glasco Electric Co.

Kansas City, Mo.
Glasco Electric Co.

Missouri Valley Electric Co.

La Crosse, Wis.
W. A. Roosevelt Co.

Lincoln, Nebr.
Enterprise Electric Co.

Little Rock, Ark.
Treadway Electric Co.

Los Angeles, Calif.
California Hardware Co.

The Electric Corporation

Louisville, Ky.
Peaslee-Gaulbert Corporation, Inc.

Lowell, Mass.
Frank P. McCartin Co.

Lynn, Mass.
Sager Electrical Supply Co.

Manchester, N. H.
Granite State Elec. Supply Co.

Mansfield, Ohio
The Hartman-Spreng Co.

Memphis, Tenn.
Dawkins Electric Co.

Miami, Fla.
Robertson Supply Co., Inc.

Minneapolis, Minn.
Northland Electric Supply Co.

Montgomery, Ala.
Johnson Tire and Supply Co.

Muncie, Ind.
Triangle Wholesale Electric Co.

Nashville, Tenn.
Anderson's, Inc.

Newark, N. J.
Parr Electric Co., Inc.
Venino Bros. & Co.

New Orleans, La.
Electric Appliance Co.

Interstate Electric Co.

New York, N. Y.
Crannell, Nugent & Kranzer, Inc.

Norfolk, Va.
Woodhouse Electric Co., Inc.

Oakland, Calif.
The Electric Corporation

Oklahoma City, Okla.
Cook Electric Supply Co.

Oklahoma City Hardware Co.

Omaha, Nebr.
Graden Electric Co.

Paxton and Gallagher Co.

Orlando, Fla.
Robertson Supply Co., Inc.

Philadelphia, Pa.
Elliott-Lewis Electrical Co., Inc.

Phoenix, Ariz.
Arizona Hardware Supply Co.

Pittsburgh, Pa.
W. T. McCullough Electric Co.

Robbins Electric Co.

Portland, Maine
Frank M. Brown Co.

Portland, Ore.
The Electric Corporation

Marshall-Wells Co.

Providence, R. I.
City Hall Hardware Co.

Quincy, Mass.
Sager Electrical Supply Co.

Reno, Nevada
J. R. Bradley Co.

St. Joseph, Mo.
American Electric Co.

St. Louis, Mo.
Brown-Hall Supply Co.

Glasco Electric Co.

Manhattan Elec'l Supply Co., Inc.

Shapleigh Hardware Co.

St. Paul, Minn.
Electric Supply Co., Inc.

Salem, Mass.
Sager Electrical Supply Co.

San Antonio, Texas
Southern Equipment Co.

San Diego, Calif.
San Diego Standard Elec. Corp.

San Francisco, Calif.
Baker, Hamilton & Pacific Co.
The Electric Corporation

Savannah, Ga.
American Specialty & Import Co.

Seattle, Wash.
The Electric Corporation

Marshall-Wells Company

Shreveport, La.
Interstate Elec. Co. of Shreve-

port, Inc.

Sioux Falls, S. D.
Tri-State Electric Co.

Spokane, Wash.
Marshall-Wells Co.

Springfield, Ill.
United States Electric Co.

Springfield, Mass.
Hamplen Electric Supply Co.
Sager Electrical Supply Co.

Syracuse, N. Y.
A. M. Little Co.

Toledo, Ohio
The Toledo Electric Sales Co.

Tucson, Ariz.
Albert Steinfeld & Co.

Tulsa, Okla.
Electric Supply Co.

Waco, Texas
Waco Electrical Supply Co.

Washington, D. C.
Doubleday-Hill Electric Co.

Wheeling, W. Va.
The Front Co.

Wichita, Kan.
American Electric Co.

Wichita Falls, Texas
Nunn Electric Co.

Wilkes-Barre, Pa.
Bunnell-Stevens Co., Inc.

Winston-Salem, N. C.
Lambeth Electric Supply Co.

Worcester, Mass.
Sager Electrical Supply Co.

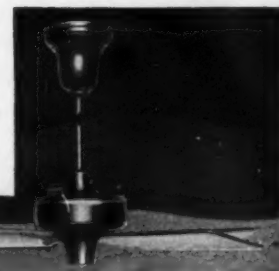
Youngstown, Ohio
The Hood Electric Co.

THE EMERSON ELEC. MFG. CO.

2018 Washington Ave., Saint Louis

806 W. Washington Blvd., Chicago

155 Sixth Avenue, New York City



EMERSON FANS

with the
5 Year Guarantee



GIANTS in size, but light in weight, these Kliegl reflectors are designed to illuminate large areas at a small cost. They are made of aluminum, in models for one or two 1000-watt lamps, and project a very bright evenly diffused light, entirely free from blinding glare, over a large area, and for a surprisingly long distance. They are particularly useful for lighting auto filling stations, swimming pools and beaches, athletic fields, etc.—also for night construction work of all kinds. Write for full particulars and trade prices.

KLIEGL BROS

UNIVERSAL ELECTRIC STAGE LIGHTING CO., INC.
ESTABLISHED 1896

THEATRICAL • DECORATIVE • SPECTACULAR
LIGHTING

321 WEST 50th STREET
NEW YORK, N.Y.



Type A

RALCO Receptacles and Plugs

With
Switch Blade Contacts



Made for Hard Service, such as coal, sand, gravel yards, welding machines, docks, shops and other places where a rugged, reliable and long-lived receptacle and plug is desired.

They are built for Service.

Ralco Receptacles will make you money. They are easy to wire. They will add to your list of satisfied customers.

The price is right.

Bulletin 101 will be mailed upon request. A sample will be submitted by one of our many jobbers upon your request to us.

Ralco Manufacturing Co.

Designers and Manufacturers

125 N. Albany Ave.,

Chicago, Ill., U. S. A.



WANT TO SEE TEXAS CONTRACTORS UNITED:—These brothers, W. A. (left) and O. J. Miller, partners in the Miller Electric Co., Ft. Worth, Tex., are showing a lively interest in the much sought State chapter of Electragists for Texas. Inasmuch as this feeling seems to be general in those parts, substantial progress in co-operation may be expected within a few months. This firm conducts a general wiring business.

tion affairs, having been a member of the executive committee of the National Electrical Contractors' Association, now known as the Association of Electragists.

In the passing of Mr. Sutter the electrical contracting industry has lost one of its foremost exponents of association work.

* * *

W. A. Diltzell Dies

Walter A. Diltzell, city electrician of New Orleans, died February 3. Mr. Diltzell went to New Orleans from Ontario, Canada, at the age of twenty-six and joined the electrical department of the Southern Pacific Railroad. In 1915 he founded the Diltzell Construction Co. which he actively managed until appointed city electrician in 1920.

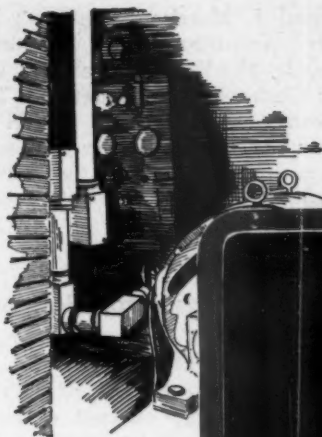
He was very active in electrical work, being a charter member of the International Association of Municipal Electricians, serving as treasurer from its foundation to the time of his death.

* * *

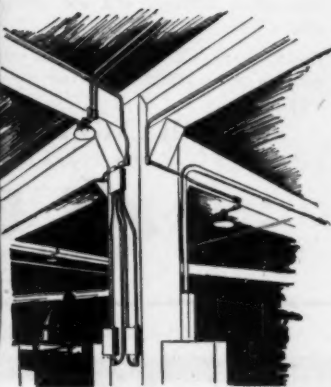
Easton League Going Strong

Although the Electrical League of Easton and Phillipsburg, Easton, Pa., is comparatively new, the members have been very active and the league is growing rapidly. One of the outstanding factors in the operation of this league is concentration on promotion of a few activities and doing these well.

The officers elected for 1930 were:



"USE A
KONDU
INSTEAD OF
A THREAD"



ASK THIS QUESTION—

Ask experienced electrical contractors and maintenance men *why they prefer KONDU Threadless Fittings*, and they'll tell you:

"KONDU is the simplest and quickest fitting to install, or to take out of a line when making changes. KONDU saves as high as 50% of our labor cost on conduit installation."

SIMPLEST: No threads to cut—no threading machines, or pipe stocks and dies. No tools but a wrench.

QUICKEST: Just slip the KONDU fitting over the ends of the conduit, and a few turns of the lock-nut at each end put the KONDU in *to stay*—never known to loosen from vibration.

NO SCRAPING OF ENAMEL, as

the sharp grounding rings of KONDU bite right through, giving a perfect ground.

TAKES THREADED CONDUIT TOO: You can use odd lengths, just the same as new conduit.

EASIEST FITTING TO CHANGE: You'll like the easy way KONDU comes out of the line—your men don't have to disturb any of the conduit to make a change.

Write for our booklet "Facts You Should Know About Kondu."

ERIE MALLEABLE IRON COMPANY
Kondu Division

510 West 12th Street, ERIE, PA.

Canadian Representative:
Kondu Manufacturing Co., Ltd., Preston, Ont.

**FIRST
IN THE FIELD OF
THREADLESS
FITTINGS—**

KONDU

**CAN BE TAKEN
OUT OF THE LINE
ANYWHERE
AT ANY TIME**

Service!

Outdoor or Indoor.



EASILY attached or removed without disturbing the wiring. Equally dependable for outdoor or indoor use as castings are cadmium plated and will not rust—a talking point alert jobbers' salesmen are using to advantage.

With three types of socket fittings manufactured exclusively by "Quad", these reflectors provide practical and economical lighting, and are strong, simple and waterproof.

Folder giving full particulars will help you sell more reflectors. Write for a copy.



DOMED REFLECTORS

QUADRANGLE MANUFACTURING CO.

30 S. Peoria St. Chicago, Ill.



Russel J. Morrison, president; Elmer Armstrong, vice president; Claude H. Yeager, treasurer, and H. Clarke Kreider, secretary. The board of directors are Russel J. Morrison, Claude H. Yeager, Elmer Armstrong and O. H. Ott, all of Easton, Pa., and A. W. Leidy, Phillipsburg, N. J.

* * *

Victoria Inspector Resigns

Sydney L. Wilson, electric wiring inspector for Victoria, B. C., and adjoining municipalities of Oak Bay and Esquimalt, resigned to enter the electrical industry in a private capacity with a Victoria firm. Mr. Wilson was electric wiring inspector for six years.

* * *

New Officers for Greater Miami Chapter

The Greater Miami Chapter, A.E.I. at a recent election named the following officers to serve during 1930:

President: Vivian Turner, Standard Electric Co.

Vice-President: Lincoln Brown, Jr., Brown Electrical Construction Co.

Secretary: H. W. Ferguson, (retained).

Treasurer: W. E. Sunderland, Sunderland Electric Co.

Executive Board: W. W. Ingalls, George LaVigne, H. J. Mabe, H. Malcomb and R. Pordham.

* * *

Fort Worth Chapter Has New Secretary

Herman Brown of the Republic Electric Co., Fort Worth, Texas, has been elected secretary of the Fort Worth Chapter of Electragists, succeeding D. E. McDonald who has served in this office since organization of the chapter early in 1929.

Secretary Brown reports: "The Fort Worth Chapter is going strong; every member is a worker and we have made wonderful progress."

* * *

Officers of Buffalo Chapter

The Associated Electrical Contractors of Buffalo, N. Y., recently affiliated with the A.E.I. as the Buffalo Chapter of Electragists, has named the following officers for 1930:

President, Karr Parker, McCarthy Brothers & Ford; secretary, Daniel L. Volker, Volker Brothers, Inc.; treasurer, Louis W. Wiperman, Wiperman & Mitchell, Inc.

SURGES AIR-COOLED TRANSFORMERS



New Code Transformer for Polarity Wiring (Type SA, single phase)

1/2 to 50 K.V.A.

Single, Two, or Three Phase

CONSULT US ON YOUR SPECIAL AND STANDARD TRANSFORMER NEEDS.

Write for Bulletin 112.

SURGES ELECTRIC CO., Milwaukee, Wis.

SURGES transformers are specially designed for factory installations—for the economical operation of low voltage incandescent lamps, portable tools, fans, welders, etc., from power mains. They are easy to install and meet the requirements of the National Board of Fire Underwriters.



SAVES excess costs of installation



*For detailed information, refer
to Catalog GEA-1143*



JOIN US IN THE GENERAL
ELECTRIC HOUR, BROADCAST
EVERY SATURDAY AT 9 P.M.,
E.S.T. ON A NATION-WIDE
N.B.C. NETWORK

IN addition to providing excellent connections, G-E bolted-type fittings can be installed quickly and easily. First, they save time, for it is necessary only to tighten the clamping bolts. Second, they save labor—soldering, heating, or annealing operations are unnecessary.

When installed, temperature rise is low because pressure is developed over the entire contact area, and because the fittings are large copper-alloy castings primarily designed for strong physical characteristics. Their current-carrying capacity is equal to that of

extra-heavy, iron-pipe-size copper tubing.

Bolted-type connector fittings can be used with iron-pipe-size copper tubing, wire, cable, and outdoor switching equipment of all commercial sizes. The line comprises straight and angular connections, T connectors, clamp-type terminals, and miscellaneous connectors for every application.

These advantages, together with the fact that they save excess costs of installation, are reasons why discerning engineers are specifying G-E fittings.

500-48

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

NEW G-E TRIP-FREE BREAKERS

Types CN-1, CP-108, and
CK-8 for Buildings



TYPE CN-1, 3 to 300 amperes—CP-108, 15 to 1200 amperes—Type CK-8, over 1200 amperes—trip-free from handle on overcurrent—time delay or instantaneous in action—triple-contact, no burning on main brush—easily replaceable burning tips—

high-pressure, yet easy-closing, main contact—brush laminations make individual end-on contact, closing with a wiping motion—low operating temperatures.

Subjected to exhaustive performance and life tests before being placed on the market.

490-5

JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 9 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

Kentucky Inspectors Hold Big Meeting

The second annual convention of the Kentucky Chapter, Western Section International Association of Electrical Inspectors, held February 7 at Covington, Ky., was attended by about two hundred delegates from all branches of the industry.

The sessions were presided over by Chairman Ray W. Chanaberry and were addressed by the following: F. I. Fairman, Kentucky Utilities Co., "The Need of Uniform Rules from Utilities' Viewpoint"; Victor H. Tousley, secretary, I. A. E. I., "The Good a Kentucky Chapter Can Accomplish"; W. S. Boyd, secretary, Western Section I. A. E. I., "Is the Wind at Your Back?"; F. O. Evertz, Ohio Inspection Bureau, "The Formation of the National Electrical Code"; A. Penn Denton, engineering director, Armored Cable Section, N. E. M. A., "Standardization in Wiring Materials and Its Influence on Simplifying Inspectors' Problems."

After inspecting the Wadsworth Electric Manufacturing Company's factory, where a buffet supper was served, the delegates assembled for the good fellowship meeting with L. G. Kuhlman, treasurer and general manager of the company, presiding. D. T. Wadsworth, vice-president and chief engineer of the company, made the address of welcome.

* * *

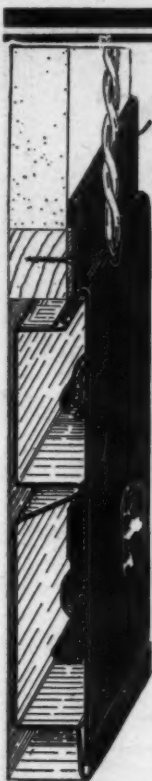
Pittsburgh Association Win School Board Fight

The Electrical Contractors' Association of Pittsburgh has won out in its controversy with the school board over the operations of the Quantity Survey Bureau.

The difficulty was precipitated by the association last fall when its members were preparing estimates for the Taylor Alderdice High School addition, as the result of the paragraph on temporary light which read as follows:

"The electrical contractor shall provide all temporary wiring and lamps required and pay for all current used for a sufficient general illumination to properly execute the work of all trades, the number of lights to be as determined by the superintendent."

The school board required a lump



Conduo-Base for Branch Circuit Distribution!

1. It gives adequate electrical branch distribution for present and future use.
2. It adds flexibility.
3. It takes care of tenant changes.
4. It solves your problem to provide distribution for high tension or low tension electrical service to prospective tenants, whatever their requirements may be.

Write for further information

Licensed Manufacturers

DAHLSTROM METALLIC DOOR CO.
Jamestown, N. Y.

UNITED METAL PRODUCTS CO.
Canton, Ohio

KNAPP BROS. MFG. CO.
Chicago, Ill.

AGAIN

BEL-SUN-LITE

IS FIRST TO GIVE YOU BIG SALES-ADVANTAGE



Bel-Sun-Lite again gives you a big sales-advantage—reflectors of solid Bel-Chrome. Pioneering chrome plate was not enough. Always working to give contractors something better, Bel-Sun-Lite now offers this new alloy, which reflects twenty per cent more light than chrome plate.

Thirty-seven per cent more efficient than aluminum; fifty per cent more than nickel, strong as steel and untarnished by acid fumes and chemical damps, Bel-Chrome opens up fields of profit you never before could attempt.

Now factories where strong chemicals are used: plating plants, dyeworks, photoengravers, can be given long-life illumination of greater brilliancy than ever before. There is money for you in reflectors of Bel-Chrome.

Call on our nearest representative to show you how to make more money by installing Bel-Sun-Lites of Bel-Chrome. His name is in the classified phone book of the nearest listed city. Call or write him or us.

Belson Manufacturing Co.

804 Sibley St.

Chicago, Ill.

Atlanta, Ga.
Buffalo, N. Y.
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Detroit, Mich.
Fl. Worth, Tex.
Gary, Ind.
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Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Miami, Fla.
Minneapolis, Minn.
New Orleans, La.
New York, N. Y.

Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Richmond, Va.
Rochester, N. Y.
St. Louis, Mo.
San Antonio, Tex.

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HOLTZER - CABOT Electric Company

Manufacturers of

Electrical Signaling Systems

for

Hospitals — Schools — Public Buildings

Telephone System
Fire Alarm System
Doctors' Paging System
Watchmen's Clock System
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Bank Alarm System
Nurses' Call System
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School Laboratory System
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A great many of the leading Hospitals and Institutions throughout the United States and Canada are equipped with Holtzer-Cabot Signaling Systems and apparatus.

THE HOLTZER-CABOT ELECTRIC CO.

125 Amory St.

Boston, Mass.

Pioneer Manufacturers of Complete Signaling Systems



**ASK
YOUR JOBBER**



"OAMCO"
Weather-proof
LIGHTING FIXTURES
for
**Outdoor
Lighting**

For all those outdoor installations, for those hundred and one requirements that weatherproof lighting fixtures have to meet—turn to the "OAMCO" Line. A most complete line of weatherproof lighting fixtures for use around barns, garages, yards, etc. Reflectors are porcelain enameled and all iron parts are electro galvanized—absolutely weatherproof. Ask your jobber, or write us direct, giving us his name.

OVERBAGH & AYRES MFG. CO.

413 So. Clinton St.

Chicago, Ill.

sum bid covering this paragraph and refused to make the specification definite as to number of lamps or number of hours or anything else. On advice of counsel, the association members assumed that the superintendent might direct temporary light for the duration of the job which was twelve months and bid accordingly, with a view to having the bids thrown out, which they were.

The school board then made charges of conspiracy and collusion against the association but in January the temporary light clause was changed to read "The owner will furnish, etc."

The association took the position that after bids have been exposed, and a minor revision occurs, it is not ethical for a member to use the knowledge of the original bids to the disadvantage of the original low bidder. This resulted in the Fort Pitt Electric Company being low bidder the second time.

The low bidder being accused of being "the consistent low bidder" proposed to the board that his estimate be checked item for item by the board's building department and an independent New York electrical engineer. While the board agreed to this, the engineer refused, on instructions from the board, to make such comparisons.

The association then presented a cost study by independent auditors on the four most recent school jobs which showed in each case that the electrical contractor lost money.

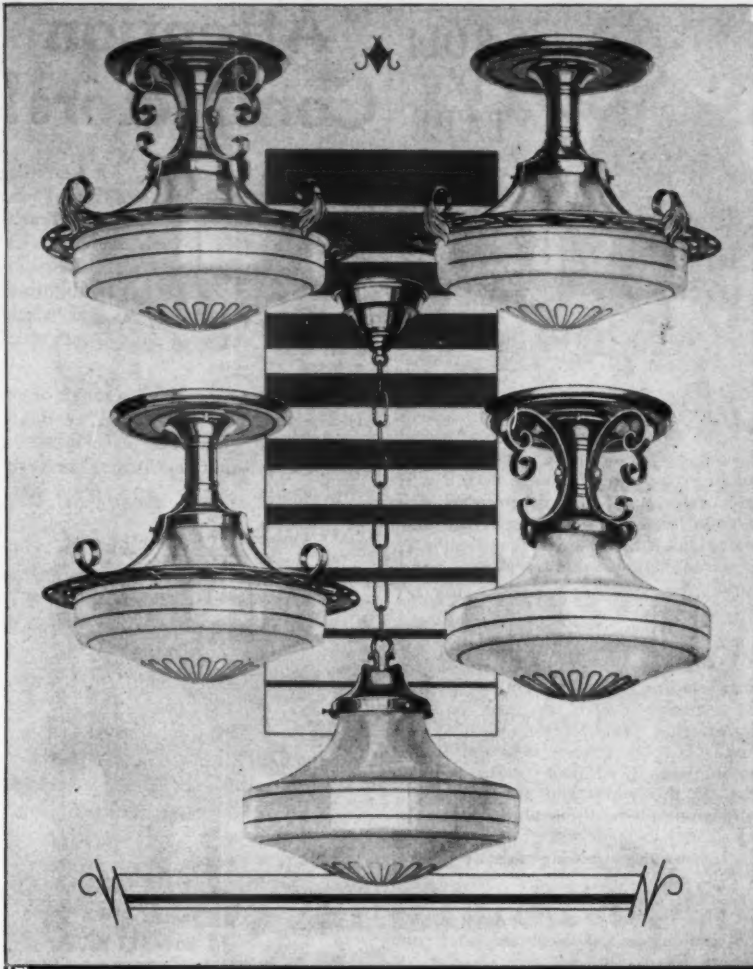
The board finally accepted the low bidder's estimate under protest.

* * *

Charles Hutchinson Dies

Charles Hutchinson, president McGraw-Hill Company of California and editorial director of *Electrical West*, died on February 12 at the age of fifty-four.

During the past four years Mr. Hutchinson also was chairman of the California Electrical Bureau and as such was very active in arranging the Red Seal setup whereby the California Electragists took over this work for the Bureau. Mr. Hutchinson was probably the leading exponent of improved trade relations on the Pacific Coast and as the respected confidant of all interests he was instrumental in bringing the several branches of the industry more closely together.



Specialization pays. The Electrical Contractor who knows how to do one thing well makes money where the jack-of-all-jobs doesn't.

Wakefield invites you to become a Lighting Specialist.

There is nothing so difficult about it. The Illuminating Engineers have reduced spacing rules and mounting heights to simple rules-of-thumb. Any graduate of the College of Common Sense can apply these rules to any ordinary lighting job and know in advance that the results will win the approval and good will of the customer.

At a profit—don't forget that.

We would like to hear from Contractors who are interested in profit. We can show them how to get it—as Lighting Specialists.

New SALES TOOLS FOR THE LIGHTING SPECIALIST

The more "fussy" your customer, the easier it is to secure lighting contracts with the Wakefield Semi-Indirect Unit. That may sound like an exaggeration, but it is true. The Wakefield Semi-Indirect, in less than two years has jumped to such popularity that it is now more than 50% in dollar value of our entire factory production. It is specified by the most exacting Illuminating Engineers—it meets the approval of the most particular Architects—but what "puts it over" is the fact that it more than satisfies The Man Who Pays The Bills. New ornamental designs, both ceiling type and chain suspension up to the 1000-watt size, are described in a new bulletin just issued.

WRITE FOR IT

THE F. W. WAKEFIELD BRASS COMPANY
VERMILION, OHIO, U.S.A.

"S" Type to control
magnetic switches...
listing at only
\$40



SAUTER TIME SWITCHES

are Enduringly
Accurate and
Dependable

'Timed' lighting or power circuits require maximum **RELIABILITY** and **ACCURACY OF TIMING**. Especially so where a heavy load is handled through a magnetic switch. Here the very best time switch is needed to do the job. And the Sauter's unrivalled *Service Record* assures dependable and accurate performance.

Spring-driven, the timing of the Sauter does not depend on continuity of voltage nor on Generator Frequency Regulation. The Sauter jewelled clock keeps perfect time irrespective of temperature or any other outside condition.

Any of the following 2 Amp. Sauter Time Switches will give perfect satisfaction in the control circuit of a magnetic switch:—

- (\$40 list) 14-day, 7-jewel clock
- (\$52 list) 40-day, 13-jewel clock
- (\$75 list) self-winding, 13-jewel clock

SAUTER

Time  Switches

R. W. CRAMER & CO., Inc.
136 Liberty Street, New York



A ROLL O' TAPE

*Electrical flash-
es gathered
among the Bu
Wire-and-Pip
Men by*

Coit A. (Duke) Smith

Field Editor, ELECTRICAL CONTRACTING

MEET P. I. Patchen of Toledo, the fellow who sells 60-amp. service for old house work. After listening to John Kuhlemeyer tell why the service must be adequate in size, Patchen was sold so much so that twelve out of the next fifteen houses he wired had 60-amp. services. Good work!

W. M. Smith, who specializes in motor and fan repairs, armature winding, etc., in Dallas, Texas, has a complete welding outfit and has all of this work done in his own shop. He says there is a great saving in time, in addition to the reduced cost of the work and that an outfit will accomplish the same thing for any contractor whose operations on repairs require welding to be done.

A BIG job by a big specialist is the running of a telephone line from Atlanta, Ga., to Birmingham, Ala., for one of the oil companies. The job is being rushed to completion by the Petroleum Electric Co., of Tulsa, Okla., which specializes in wiring installations for oil firms.

YOU know how certain companies make a business of dismantling old automobiles and keeping the parts to sell for repairs after the cars are out of date. Well, Fred Mehaffey, electrical contractor in Houston, Tex., does the same thing with electrical material, and the demand for obsolete items is astonishing. When another contractor or a jobber gets a call for a "sleeper" in a hurry, they get in touch with Mehaffey, and they say he hasn't been stumped on anything for a long, long time.

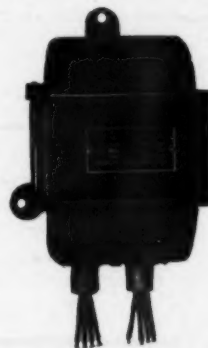
THERE'S a lot of romance to the electrical contracting business, if we could only dig all of it up. For instance, Wm. K. Grace, Dallas electrician, specializes in large buildings, and here's how he got the fever. When the original Adolphus Hotel was constructed, he worked on it as a wiring foreman for the Newberry Electric Co. of St. Louis. When the Annex was added W. K. was on the job

Attention Contractors!

If we had permission to list here the many nationally known institutions who are using Sorgel Air-Cooled Transformers to change their A. C. power circuits to be more practical, more economical, and more efficient for lighting, portable tools, appliances, you would be surprised at the amount of industrial business awaiting you.

Being Air-Cooled, Sorgel Transformers can be installed easily and economically in any convenient place inside of buildings, without enclosures or fire-proof vaults.

Approved by Underwriters



Made in
Sizes 1/4 to 50 KVA.

Single-phase, 2-phase and 3-phase

110, 220, 440, 550 Volt

SORGEL

AIR-COOLED
TRANSFORMERS

WITH CONDUIT CONNECTIONS

Also Complete Line of

Air-Cooled Booster Auto Transformers

for A. C. Network Systems

Sizes 1 to 500 KVA.

Transformers Designed
for Special Applications

Sorgel Electric Co.
Clybourn & W. Water Sts.
Milwaukee, Wis.

Made in Sizes for Every Need The *Levolier* Switch

As shown graphically in the illustration at the right Levolver Switches are made with stems of three different sizes to meet varied requirements. No. 61-PL as illustrated has a plain lever without chain and cord for brackets and appliances. There is also a Levolver Link Switch which may be used in connection with chain fixtures. These switches in combination with the Levolver Canopy Switch Hickey and the new Levolver Switch Bracket make possible the widest possible range of uses at a big saving in time, labor and material while at the same time assuring the utmost efficiency.

Takes the Smash of Even a Cold 500 Watt Gas Filled Lamp

The Levolver Switch is "the little giant of switches." It is the smallest six Ampere Pull Switch made yet repeatedly takes, for thousands of makes and breaks, the smash of cold 500 watt gas filled lamps. It has twice the carrying capacity of any switch its size.

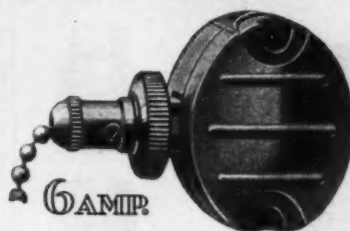
Write for the Pocket Edition
of the McGill Catalog



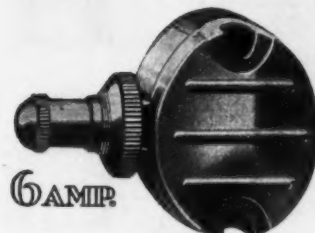
Drop a card in the mail asking for your copy of the pocket edition of the McGill catalog. Fits conveniently in your coat pocket. Handy to have with you on the job. Illustrates and describes the complete line of McGill Electrical Specialties including over 50 different types of Lamp Guards.



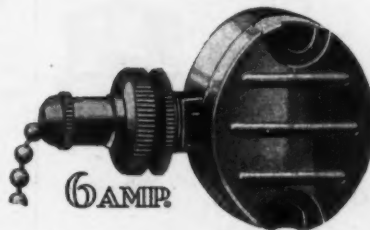
McGILL
MANUFACTURING CO.
Electrical Specialties of Quality
ESTABLISHED 1904
VALPARAISO · INDIANA



No. 61



No. 61-PL



No. 62

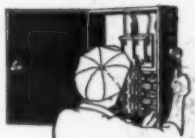


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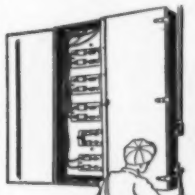


No. 59

Do in a Minute What Formerly Took an Hour



Cutting a 1" hole in an 8 circuit cabinet. Punch has 1/4" clearance from a live switch while cutting hole.



Cutting a 3" conduit hole in a 200 horsepower cabinet while the current is on.

Greenlee Knockout Tools

Electricians enlarging holes in switch and circuit cabinets, panel boards, etc., save a tremendous amount of time by using the Greenlee Knockout Tools. These tools enlarge holes in metal in one and one-half minutes or less per hole. And when they are through the holes are left clean and round—no filing is necessary.

The Knockout Punch, shown above, is built in various sizes to enlarge holes from 7/8" to 3 1/4". Sets are conveniently packed in leather cases in the following assortments: No. 735 for 3/8, 3/4, 1 and 1 1/4-inch conduit. No. 737 for 1 1/2 and 2-inch conduit.

The Knockout Cutter enlarges holes to fit 1 1/2, 2, 2 1/2 and 3-inch conduit. Operation of all tools is simple and requires only a common wrench.

GREENLEE TOOL CO. Rockford, Ill.

Please send complete information on your Knockout Tools.

Firm.....
Name.....
Address.....
City.....
Jobber or Dealer.....

3-30



again, this time as manager for Newberry. By the time the third portion was put up, he had established his own firm in Dallas, and that last job was all his own. Among other large installations to his credit are the East Dial building, for the Southwestern Bell Telephone Co., the Dallas Times-Herald, and the Woolford building. The American Exchange Bank in Dallas and the Baylor Auditorium at Waco are still in progress.

HOW many lines of fixtures should a contractor carry in order properly to serve his trade? We met one fellow a few days ago who carried fixtures of fourteen different makes. He was one of those contractors who, a few years ago, handled one line exclusively—the famous line which over-night turned from a dealer policy to central station outlets. This particular dealer refuses ever again to put all of his eggs in one basket—but why so many as fourteen?

VHIRSCH, head of Oklahoma Electric Supply Co., Oklahoma City contractors, is a bear for advertising. I was taking in a vaudeville there recently when the curtain went up, disclosing the usual maid making a phone call. "Hello!" she trilled. "Oklahoma Electric Supply Co? Well, please send an electrician right away—our electric system is all wrong." Two wiremen dashed out of the wings, bearing a toolkit with the above firm's name on it. Of course they turned out to be a couple of acrobats, but they climbed like real journeymen, finding the trouble in a jiffy.

PAUL Gilmour of Columbus has wired but one house in his life and that was four or five years ago. Not being accustomed to this class of work he gave the owner a complete job and the price was around \$500. The price didn't please the owner a bit at the time; but the other day he met Paul on the street and said, "Say, you know all that wiring you put in my house? Well, you know I've got a modern job even now, haven't I?" The memory of the price had given way to the pride of ownership.

N. E. Busby, Dallas, Texas, has a blackboard in his shop which serves a useful purpose and at the same time boosts the morale of all his people. It is divided off into months and shows the exact amount, in dollars and cents, of work actually contracted for and in progress, for each month. It also shows when the work is to be completed, affording a complete picture of how things are going, which is valuable in planning present and future activities.



WHAT EVERY
STOREKEEPER
SHOULD BE
TOLD ABOUT
STORE LIGHT-
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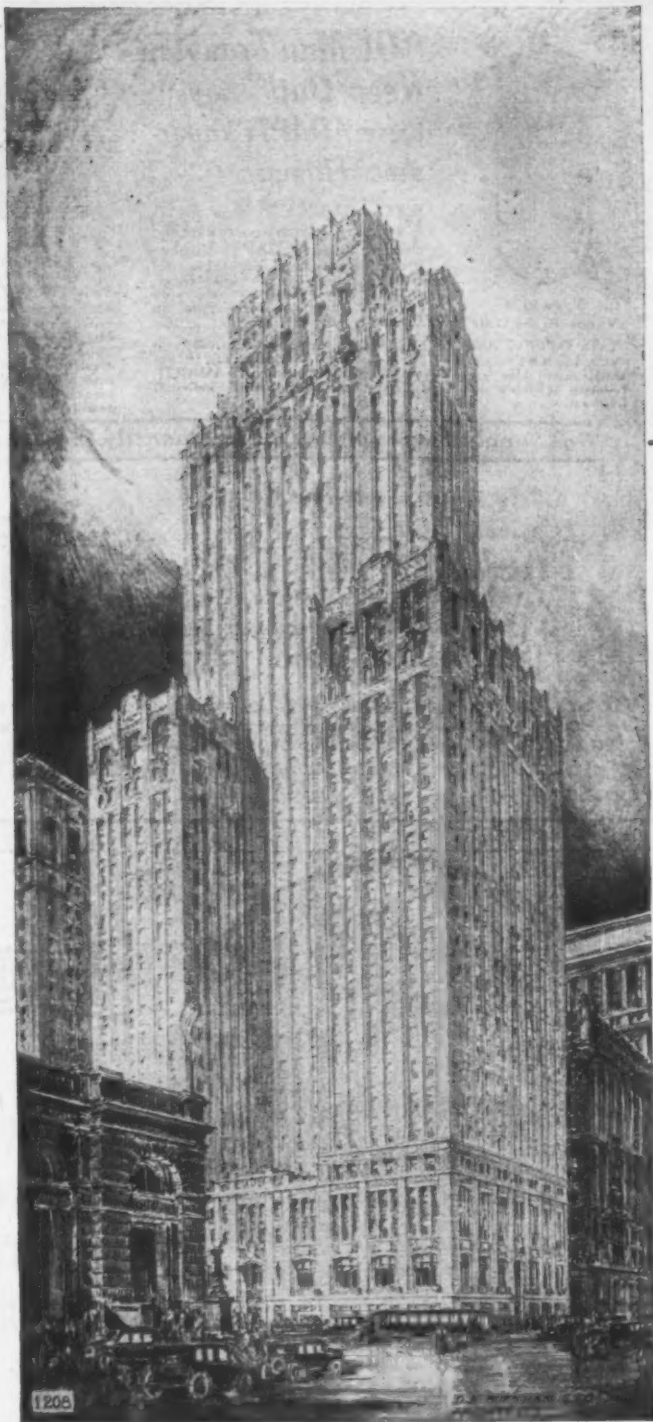
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Chrysler Building Wiring Design

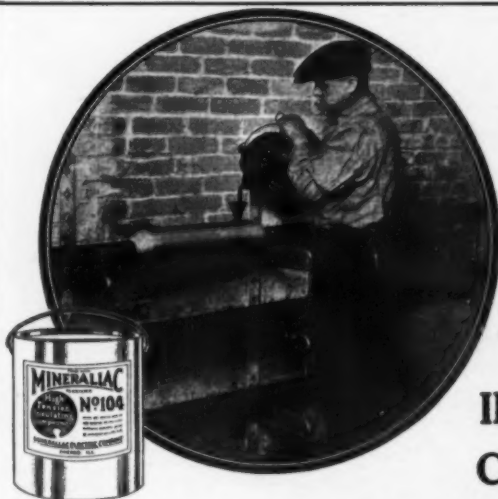
(Continued from Page 10)

of panel board circuits to be provided. This ratio gave us enough branch circuits for the actual circuits in use plus at least 10 per cent spares for future requirements. This, of course, does not include the provision for public lighting circuits for which a separate section of one panel on each floor was arranged, to be fed from a main public lighting feeder. We found that in satisfying the requirements of the city code, voltage drop and standard cable sizes that we could provide the building with nearly 4 watts per sq. ft. or about twice what we concluded our individual in his 100 ft. area could use.

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While we have taken care of the highest demand on the lighting facilities that it is possible to foresee from present knowledge, we know that the future is certain to have in store further developments in the electrical field that may put increased burdens on the arteries of supply. Rather, however, than invest capital in materials and equipment which may lie idle over a period of years, and then not prove to be exactly suitable to the changed or increased requirements, we believe it to be sound practice to make the necessary arrangements for such increased facilities to be installed when the need for them materializes. From the construction angle this means that present runs of main feeder conduits will be so installed that additional conduits can be accommodated later. The shaft layouts will be made with an eye to leaving space for future risers. In other words, the entire feeder route from source to ultimate distribution is scrutinized with a view to keeping the way clear for expansion.

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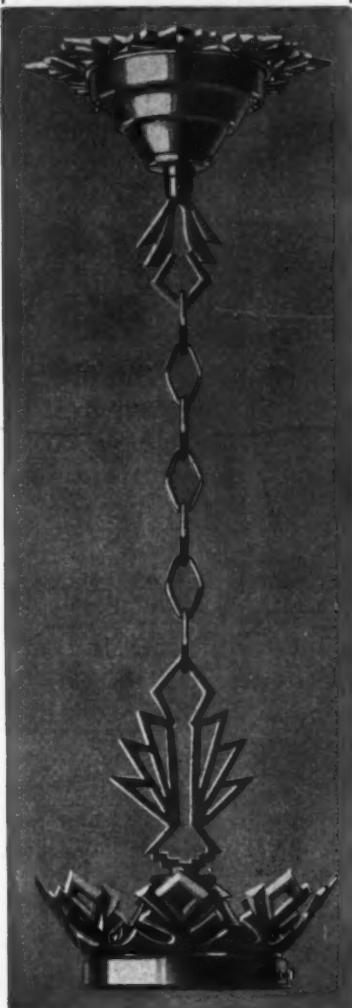
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Chrysler Building Feeder Design

(Continued from Page 12)

academic interest; in almost all cases the sizes of conductors obtained was entirely too small and were not employed.

For example, the four panelboards serving the northwest portions of the eighteenth to the twenty-first floors, inclusive were supplied by a feeder having a horizontal length of 115 ft., and a vertical length of 125 ft. totaling 240 ft. The number of branch circuits equalled 144 thus requiring 288 amp. per phase of a 3-phase feeder circuit.

The actual possible load, on the basis of the conservative values described previously, was 228 amp. per phase. The area of the portions of floors served by the four panelboards totaled 28,340 sq. ft. Under the national Code scheme this would require 135 amp. per phase.

Employing the formula we get for method No. 1 a cross sectional area of 345,600 C. M., method No. 2, 235,200 C. M. and method No. 3, 162,000 C. M. After making back checks on the actual voltage drops produced by both a 300,000 and a 350,000 C.M. cable, the final size selected was the latter. This permitted of the easy installation of four such conductors in a 3-1/2-in. conduit, kept down the skin effect and reactance to reasonable values, fully complied with the New York City Code, and permitted the use of a 400-amp. switch and 300-amp. fuses on the local switchboard. This last benefit to the building ownership and management is of the greatest value. It provides them with a certain amount of excess capacity for the future and allows them to foster and encourage the employment of all kinds of current consuming devices among the tenants.

The method employed in making the back check of the prospective voltage drop was again a radical departure from standard practice. Instead of using the formula of

$$Vd = IR$$

where Vd = volts drop

I = current per conductor

R = resistance per conductor

recourse was had to the formula

$$Vd = RI \cos. \phi \left(1 + \frac{X}{R} \tan. \phi \right)$$



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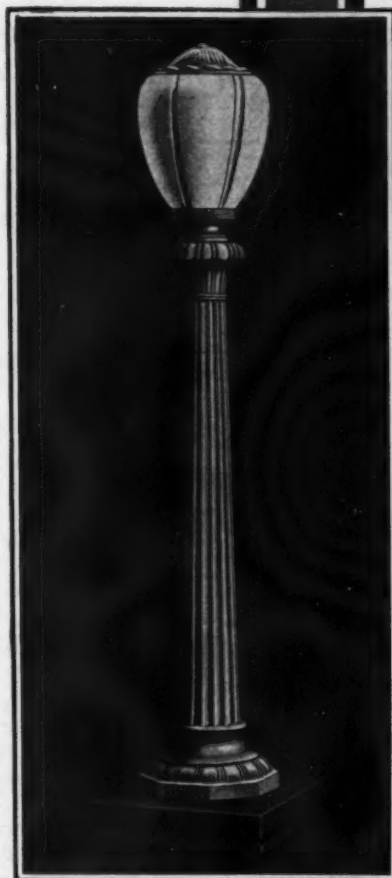
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where V_d , and I have the same values as before,

R = the effective resistance of the conductor; this being composed of the ordinary ohmic values as given in various wire tables plus the ohmic resistance produced by "skin effect" present when the larger size conductors are employed in alternating current work.

$\cos. \Phi$ = the power factor of the circuit, assumed to be 0.95.

$\tan. \Phi$ = 0.32.

X = the ohmic reactance of the conductor when installed with three others in iron conduit.

Skin Effect

To obtain the values of "skin effect" recourse was had to the volume "Electrical Characteristics of Transmission Line Circuits" published by the Westinghouse company. Finding the value of X , the ohmic resistance, was not quite so simple. The above book was intended primarily for transmission line design and supplied reactance data for various spacings, none of which were quite applicable for feeders installed in vertical and horizontal conduits.

It was necessary, therefore, to obtain from the above tables interpolated values which would coincide with feeder spacings encountered in building work. The vertical cable supports were specified to be the Russell & Stoll type and this company kindly supplied shop drawings showing the center to center spacings for different cross sectional areas of cables in the various sizes of conduit ranging from $1\frac{1}{4}$ in. to $4\frac{1}{2}$ in. For horizontal runs, the thickness of the insulation of the conductors supplied by the various wire manufacturers was employed. The results are embodied in the accompanying table (see page 12).

The copper resistance of a No. 1 wire for example, is 0.1324 ohm per 1000 ft., the effective resistance i.e., including resistance of "skin effect," is 0.1325 ohm. The reactance per 1000 ft. is 0.0563 ohm. For a 400,000 C.M. cable the values are 0.0277 ohm for copper resistance, 0.0281 ohm for copper plus skin effect resistance, and 0.0458 ohm for reactance. The ohmic reactance is almost twice the ohmic resistance.

In 1,000,000 C.M. cables the figures are 0.01204 ohm as against

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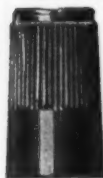
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0.0460 ohm, the ohmic reactance being almost four times as great as the effective ohmic resistance. The conclusions that follow from this table are very clear. It is economically unwise, due to the voltage drop, caused by the reactance ohms to use any cable greater than 500,000 C.M., except in rare cases.

The values for the vertical arrangements of conductors were worked out very completely for all sizes from No. 1 to 1,200,000 C.M. When it came to the horizontal position, only those figures pertaining to the actual feeder sizes contemplated were developed. Where intermediate sizes were justified interpolation supplied the data.

Using the last formula and the typical feeder example described previously and checking the voltage drop for the loads assumed we get:
 $V_d = 288 \times .032 \times .240 \times .95 (1 + .0472 \times .115 + .038 \times .125) \times .32$

where .032 = amperes per conductor
.032 = effective ohmic resistance of 1000 ft. of 350,000 C.M. cable.
240 = total length of one conductor in feet.
.95 = power factor.
115 = length of vertical portion of conductor in ft.
125 = length of horizontal portion of conductor in ft.
.0472 = reactance of 1000 ft. of conductor in vertical position.
.038 = reactance of 1000 ft. of conductor in horizontal position.
.32 = tan. of angle whose cos. is 0.95.

Completing the above operation we get a drop across one phase and neutral of 2.98 volts or practically 3 volts for method No. 1. Substituting in the above formula 228 amp. (actual possible load) in place of 288 we get a drop of 2.36 volts. The first value equals 2.4 percent, the second value equals 1.9 percent of the voltage across phases. As the desirable value was 2 percent, it is apparent that the 350,000 C.M. cable elected will come nearest to fulfilling that objective in actual practice.

The feeder voltage at the panelboards will then vary from 117 to 117.6 volts between any phase and neutral. Some of the branch circuits



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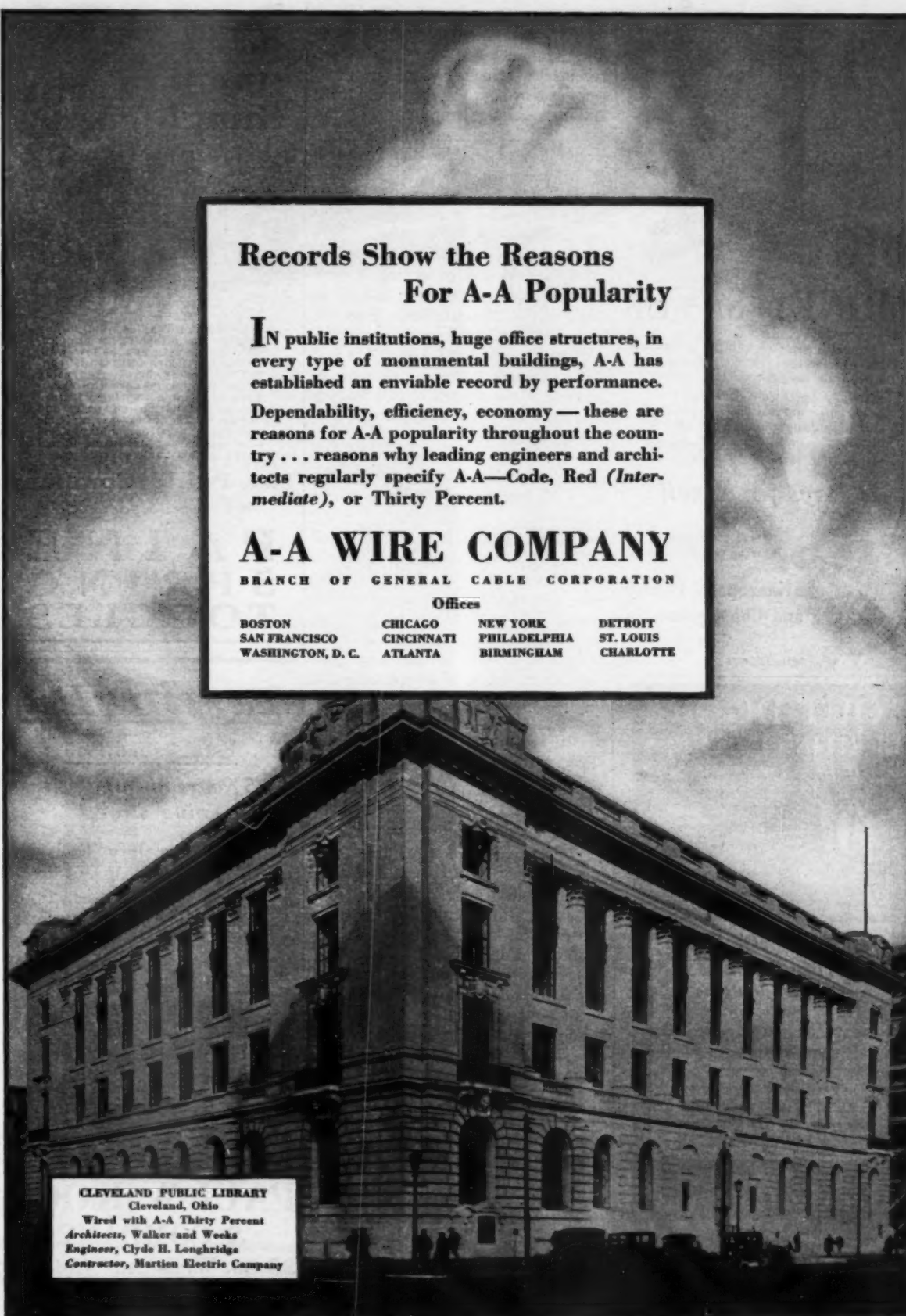
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totalled as much as 120 ft. in length to the first outlet and averaged three ceiling outlets and one convenience receptacle. Such circuits were to employ No. 12 wire. Assuming three 200-watt ceiling lamps and one 50-watt desk lamp, a total of 5.6 amp. would flow. The resistance of 240 ft. of wire would be 0.38 ohm producing a voltage drop of 2.1 volts at the first outlet or a voltage averaging between 114.9 and 115.5. There is also reserve capacity for an increase in the size of ceiling outlets. Assume three 300-watt lamps in place of the 200-watt size. Then the current flow is 8.2 amp. producing a resulting voltage of 114 to 114.5 at the first outlet. An increase of 46 percent in the branch circuit loading results in only lowering the effective voltage by 1 volt.

A modification of the above methods was employed in calculating the sizes of feeders required for power purposes.

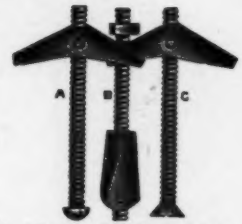
Should a feeder as calculated require more than 600,000 C. M. in cross sectional area it was divided into two sets of conductors, connected in multiple at each end. Then the voltage drop calculation was completed. The ohmic resistance and ohmic reactance were computed on the basis of two or three conductors, as the case may be, connected in parallel. If the volts drop exceeded the allowable limit the next commercial size cable was tried until the correct values were obtained.

Adequate Feeders

The question of providing adequate feeder sizes, particularly for lighting purposes, is becoming increasingly important. Competitive construction of office buildings has resulted, in a great many cases, in a dangerous decrease in the cross sectional areas of conductors and consequent poor illumination with the absolute certainty that in a few years considerable additions would have to be made to the feeder system.

The employment of a load factor on feeder sizes is a dangerous thing. One need but observe representative office buildings throughout any large city and note how many entire floors are fully illuminated at the same time for perhaps several hours daily, particularly in the winter months, to realize that load factors are close to 100 per cent for a good deal of the time.

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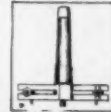
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In the Editor's Mail

(Continued from Page 30)

plasterers put on the first coat of plaster, this being called "rough plastering," many times outlet boxes are completely covered over. We have had cases of covering convenience outlets, switch outlets and wall bracket outlets. We have had other cases where, were it not for our Red Seal field man, the outlets would have been lost forever to the user. I believe that you would find the same experience in any other city where the Red Seal Plan is in operation to any extent at all. No one can say how many outlets are lost in the larger cities each year due to the way these rough plasterers work.

Our field man always watches this very closely, but it would certainly be a fine thing if some inexpensive way could be devised to eliminate this trouble.

J. W. WESTON,
Secretary-Manager Electric
and Radio Association.

Kansas City, Mo.

* * *

Plaster in Outlet Boxes

Editor,

ELECTRICAL CONTRACTING:

I was very much interested in the letter in the February issue of ELECTRICAL CONTRACTING by Don Ferguson, Concord, Mass., regarding a cover for outlet boxes which would prevent the covering of boxes by the plasterer.

We have had considerable trouble in locating and digging out convenience outlets in Red Seal jobs during the past few years. In some cases, as high as five or six convenience outlets were covered in one home.

Some time ago the plastering contractors made a ruling that journeymen plasterers would have to dig out covered convenience outlets and repair the plaster on their own time. This has relieved the situation to some extent, but I believe that an outlet box cover such as mentioned in Mr. Ferguson's letter, might work out to good advantage in wiring new homes.

E. J. BEIL,
Executive Manager,
Electrical League of Youngstown,
Ohio.



An Opportunity

for every man in the electrical business to examine for 10 days the greatest electrical library published. There is no obligation—no salesmen. These books have an immediate dollars-and-cents value to you, no matter what your work is at present.

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TERRELL CROFT prepared this new subscription library for practical electricians. The books are packed with the kind of practical step-by-step, helpful information and question-answering diagrams and illustrations that has made all the other Croft books so famous.

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THE six volumes of Croft's AMERICAN ELECTRICIANS' LIBRARY bring you step-by-step directions for the installation of every type of conduit wiring job; they tell you just how to handle every kind of lighting circuit and switch job; they give you stunts for saving time on maintenance routine; they give you usable tips on electrical machinery erection; they offer you practical, clear explanations of all kinds of A.C. armature winding jobs; they bring you a thousand armature winding and electrical machinery and control diagrams; they show you the surest, quickest methods of locating and remedying circuit troubles. They cover a thousand and one problems that you have to face daily. They give you the kind of practical job information that has made all of the Croft books famous. They are books of useful hows and whys and wherefores for wiremen, trouble shooters, armature winders, electrical maintenance men and electrical contractors.

More than 1,000 wiring diagrams—

The thousand wiring diagrams in these six books are alone worth the price of the entire library to any practical electrician. Many of these diagrams are unobtainable elsewhere; many more are very hard to get from any other source; all of them are much clearer and more helpful than most wiring plans available. They include:

- 300 single-phase armature windings.
- 9 single-phase armature windings.
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- 100 three-phase armature windings.
- 570 electrical machinery and control wiring diagrams.
- 300 lighting circuit diagrams, and a number of other practical working drawings.

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 Please send me the Croft American Electricians' Library for 10 days' free examination. If satisfactory, I will send \$1.50 in ten days and \$2.00 a month until \$17.50 has been paid. If not wanted I will write to you for return shipping instructions. Upon receipt of my first payment you are to send me, without extra cost, a copy of Braymer and Roe's Rewinding Small Motors.

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(Books sent on approval to retail purchasers in the U. S. and Canada only.)

E.C. 3-30

Manufacturers News

A department for the announcement of activities of manufacturers that are of interest to contractors, such as changes in executive personnel, branch offices, new products, etc.

G. E. Co. Conducts Wiring Sales Contest

A prize contest in which every electrical contractor in the country can participate, whether he sells General Electric wiring systems or not, is being conducted by the merchandise department of the General Electric Co., Bridgeport, Conn. Fifty-three awards amounting to \$1000.00 will be given away at the close of the contest April 14, and every contestant will receive a booklet announcing the prize winners and their ideas.

This contest is to be decided upon ideas and electrical contractors may choose one of the following heads for their subjects: "How I Tell My Story;" "How Profitable Wiring Jobs Have Become as Compared with Former Days" and "Why I Sell the General Electric Wiring System."

In order to make these subjects most effective and as concrete as possible General Electric Co. has suggested that electrical contractors describe actual experiences relating to the above subjects and wherever possible accompany the articles with photographs of the individual contractor, his place of business, window displays, billboard signs, etc., as well as actual copies of newspaper advertisements, letters to prospects, printed literature, etc.

* * *

New Philadelphia Manager for Cutler-Hammer

Cutler-Hammer, Inc., Milwaukee, Wis., has appointed Frank J. Burd district manager of its Philadelphia office, replacing T. E. Beddoe, who has resigned.

Mr. Burd, an electrical engineer, has been with Cutler-Hammer for thirty years, with the exception of two years during the war period when he was electrical engineer for

the Midvale Steel & Ordnance Co., Johnstown, Pa.

For the past nine and one-half years Mr. Burd was in charge of the steel mill division of Cutler-Hammer in Chicago, prior to which time he was in charge of this division in the Pittsburgh office.

* * *

Trumbull Moves Branch Offices

The Trumbull Electric Mfg. Co., Plainville, Conn., announces that after March 1 its San Francisco office will be combined with the A. G. Electric Co., which was bought out by Trumbull a few months ago, and will be located at 432-4th Street.

The Detroit office of Trumbull will be at 415 Brainerd Street, which was the former office of the A. G. Electric Mfg. Co. and managed by David Laird, who is now one of the engineers of the Trumbull company. This office is part of the Chicago district and C. L. Baier will be in charge.

Wiremold Occupies New Building

The Wiremold Company is now occupying the large new factory building recently completed in Hartford, Conn., where its headquarters have been located for many years.

* * *

Cutler-Hammer Moves Detroit Office

Cutler-Hammer, Inc., Milwaukee, Wis., announces its Detroit district sales office will be located at 2755 East Grand Blvd., Detroit, Mich., after February 10. This new location includes warehouse facilities where stock of all standard C-H products will be carried for immediate delivery.

* * *

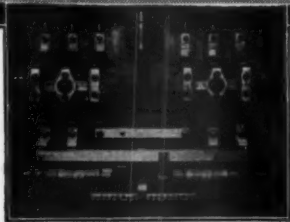
The Meier Electric & Machine Co., Indianapolis, Ind., has just published a 20-page catalog descriptive of its complete line of fans and coolers, including a hot-air type fan and fan for use in explosive atmospheres.



CELEBRATES TENTH ANNIVERSARY:—The Reflector & Illuminating Company, Chicago, Ill., celebrated its tenth anniversary at a dinner and reception on February 6, at which a large gathering of employees and invited guests were present. A chart showing the progress of the company since its organization in 1920 depicted a consistent growth terminating in an increase of 49 percent of sales in 1929 over 1928. James C. Herron, president and general manager in commenting upon these figures stated that the business indications tended to show that 1930 would be another banner year for the company.



What do you specialize in?



—for instance, HOSPITALS!

Perhaps the most important circuits in a hospital wiring job are those for the operating room lights.

Lights in these rooms must not fail. Life is dependent upon them.

Most operating room circuits have two sources of current, the main supply and an emergency supply.

"Diamond H" Remote Control Switches are the important connecting link. They automatically switch from one current supply to the other, in case of failure of main supply. They are absolutely dependable.

We recommend Type "G" for this kind of job.

For other general uses about the hospital, Type "F" affords easy and simple control of many circuits.

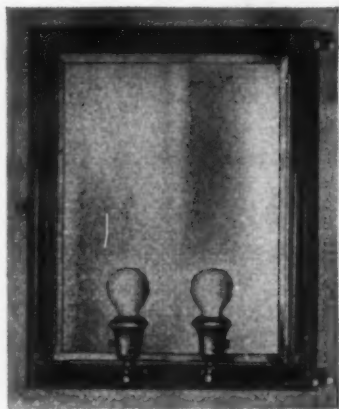
*Bulletin No. 10 will tell you all about them.
Send for it.*

THE HART MANUFACTURING CO.
HARTFORD, CONN.

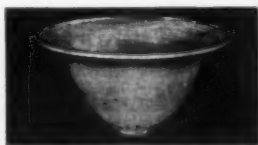
DALLAS BOSTON NEW YORK CHICAGO DETROIT MINNEAPOLIS
SAN FRANCISCO TORONTO, CANADA PHILADELPHIA CLEVELAND

DIAMOND SWITCHES

New Electrical Products

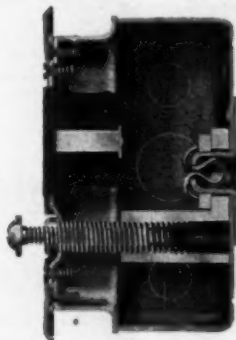


A new sliding, adjustable light fixture for bathroom cabinets and mirrors with the light moving in the slot has been announced by the Henkel Edge-Lite Corporation, 900 No. Franklin St., Chicago, Ill. The body of the cabinet is made of heavy gauge automobile sheet steel, electrically spot welded, concealed entirely behind mirror door which is made of heavy die-cast white brass; the mirror is of plate-glass which slides into aluminum strips and is movable; the light sockets are mounted on movable bracket arms that slide in a deep slot in the frame of the mirror with strong friction clamps holding the lights in position when moved. Electrical connection is made from the door frame through the metal tube at top, which serves as a door stop and wire conduit combined—then into the wiring pocket at top of cabinet where electrical connection is made. There are no exposed wires, no screw adjustments and it is complete in one unit. This can be furnished in six different models, finished in Duco lacquer in various colors.



The Pittsburgh Reflector Co., Pittsburgh, Pa., is now manufacturing permafactores in various types and sizes for use in indirect luminaires. These are heavily cross-fluted on silvered surface of the glass, providing a smooth distribution of light over the ceiling with the interior surface of the reflector smooth, making it easy to keep clean as there are no deep wrinkles in which dust and dirt may lodge.

A complete line of rubber covered wires in black, white, red, green, blue, yellow, brown and white with tracer, available in No. 14 solid single braid, in code, intermediate and 30 percent grades is announced by the merchandise department of the General Electric Co., Bridgeport, Conn. These colored code wires, it is stated, have a smooth clean finish.



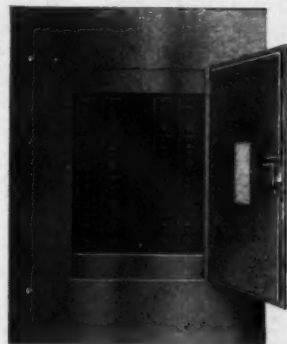
Russell & Stoll Co., 53 Rose St., New York City, is now manufacturing two fan hanger outlets known as the stud and yoke lock types. Both types have the rigid vibration proof assembly; standard square outlet box and cover; heavy gauge cadmium steel plate supporting receptacle; receptacle with supporting straps welded to steel plate preventing loosening due to vibration; heavy gauge brass finishing plate held independently which prevents loosening of plate on failure to replace the fan hanger supporting screw when fan is removed. The stud lock type has a rigid assembly of malleable iron stud to box with lock nut and additional cotter safety pin. The yoke lock type has a clamping action and two point support produced by assembly of brass toggle and malleable iron yoke.



Show case lighting equipment, made of soft brass tubing, which can easily be bent or cut to different sizes, is now being manufactured by Wheeler Reflector Co., Boston, Mass. The outside of the tubing is finished statuary bronze and inside is aluminum. The reflectors are complete for installation, being wired for through connection and are plugged directly together or spaced apart with tubing. Reflectors are made to accommodate 25-watt T-10 tubular lamps.



A new bender specially adapted for thin wall tubing is being marketed by the Parabend Corporation, Toledo, Ohio. One end of the bender, which is semi-circular in shape, is placed over the tubing at the required distance to make an exact bend. The bender is then pulled back by means of a leverage supplied with an ordinary piece of pipe inserted in the socket at the top. Manufacturers of Parabend claim that in addition to making uniform and accurate bends, it will perform its work without twisting or kinking.



A no-fuse panel board with G.E. automatic breakers, 15 amp., 125-volt, d.c., 25-60 cycle, 125-volt, a.c. combining the positive action of the magnet with the time lag of the thermal element has been announced by the Trumbull Electric Mfg Co., Plainville, Conn. The automatic circuit breaker used in this panel board has single-pole with double-break operation; it has no exposed metal parts; it has a floating contact spreader and silver and copper sliding contacts with tumbler handle indicating whether circuit is open or closed by its relation to the "on" and "off" markings moulded on textolite cover. The panel board can be built in any desired number of circuits in multiples of four. It also has individual bakelite covers on each circuit breaker.

Tune in on the Graybar Hour, 10 to 10:30 Eastern Standard Time every Tuesday night. . . . Columbia Broadcasting System.



STRANGE WHAT LIGHT WILL DO if you don't have BALANCED LIGHTING

It is common knowledge that high efficiency lighting units do not necessarily guarantee good lighting. As every contractor knows, costly eyestrain and expensive errors are caused by the misapplication of otherwise good lighting units... But it is comparatively easy to prevent light from doing unexpected and undesirable things.

A lighting unit can be selected accurately to meet existing lighting needs. But no one unit can be a cure-all.

Experience has shown the most useful

FOR BALANCED LIGHTING, WEIGH:			
Horizontal Light	vs.	Reflected Glare	
Vertical Light	vs.	Direct Glare	
Shadow Depths	vs.	Flat Shadows	
Maintenance & Design	vs.	First Cost	



Showing how various factors balance, for best results in any given case

lighting to be an adjustment of variable quantities—in a fixture, the *balance* of lighting factors against its requirements. Eight points are here involved, as the table shows.

From this comes Balanced Lighting, the key-note of the Graybar Lighting Line—the yardstick employed by Graybar Lighting Engineers in selecting, from all types of fixtures, the best fixture for a given purpose.

Why not apply that yardstick to your lighting problems? See coupon below.



The Shelcrest, a Bakelite fixture. The leader in the Graybar line. But only one of a great many fixtures.

GraybaR

BALANCED LIGHTING

COUPON

Graybar Electric Co., Graybar Building, Lexington Avenue and 43rd Street, New York, N. Y.
Gentlemen: We are interested in knowing more about BALANCED LIGHTING.

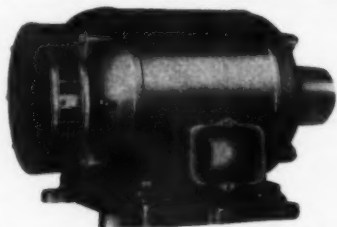
NAME.....

ADDRESS.....

New Electrical Products

A new department for the manufacture of a complete line of friction and rubber tapes, of standard and high test grade, has been added by the Dexter Rubber Corporation, 2 West 45th St., New York.

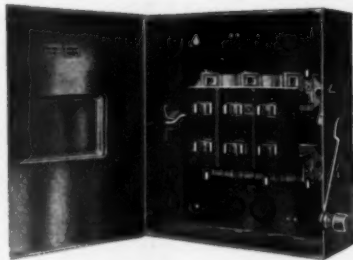
In connection with the opening of this new department, Dexter also announces twin tape, a combination of rubber and friction tape in a single unit of highest grade insulating properties. The features claimed for this twin tape are the elimination of the necessity of separate rubber and friction tapes to be used for wrapping joints and splices; and non-stretchability to insure uniform thickness of insulation and dielectric resistance which gives a better and neater splice.



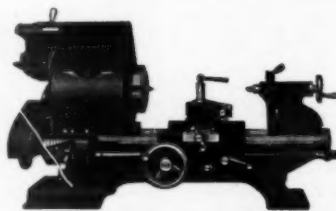
Century Electric Co., 1806 Pine St., St. Louis, Mo. has developed a totally-enclosed, fan-cooled squirrel cage induction motor with size advantages of a standard open rated motor. This motor is completely enclosed with ribbed cast-iron coil guards with no rubbing seals or air-gaps; the stator, rotor and other internal parts of the motor are completely isolated from outside air; the fan and fan housing are externally mounted on front end of motor—opposite pulley end; the fan blades are radial. In addition to these features, the air passages are unobstructed, are not easily clogged and may be readily blown out. Provisions are made to circulate air within the motor shell and transfer the heat to the radiating surfaces where it is carried away and dissipated by the cooling air.



A show window reflector specifically designed for use with 150-watt lamps is now being marketed by Reflector & Illuminating Co., Chicago, Ill. This reflector is finished in rich Indian brown.



Colt's Patent Fire Arms Mfg. Co., Hartford, Conn., announces the Noark quadbreak switch which, it claims, practically eliminates destructive arcing. This is an airbreak switch with four separate breaks in each leg or eight breaks in two legs of a circuit. The action of the switch is accomplished by two contacts fastened in an insulating slide guided edgewise between two insulating blocks, moving between two sets of clips. This construction permits full floating contacts which seat themselves with a wiping action every time the switch is thrown "on." When the switch is thrown "off," the contacts are moved between, thereby acting as a constant barrier. Combined with the sliding switch and its movable contacts is the lower base for stationary clips and fuse blocks, which completes the switch assembly. The cabinet is stamped from high grade steel with plenty of easily removable concentric knockouts. The quick-make and quick-break mechanism is of the over the center toggle compression spring type. The switches are made in sealed cover type cabinet and the accessible cover cabinet.



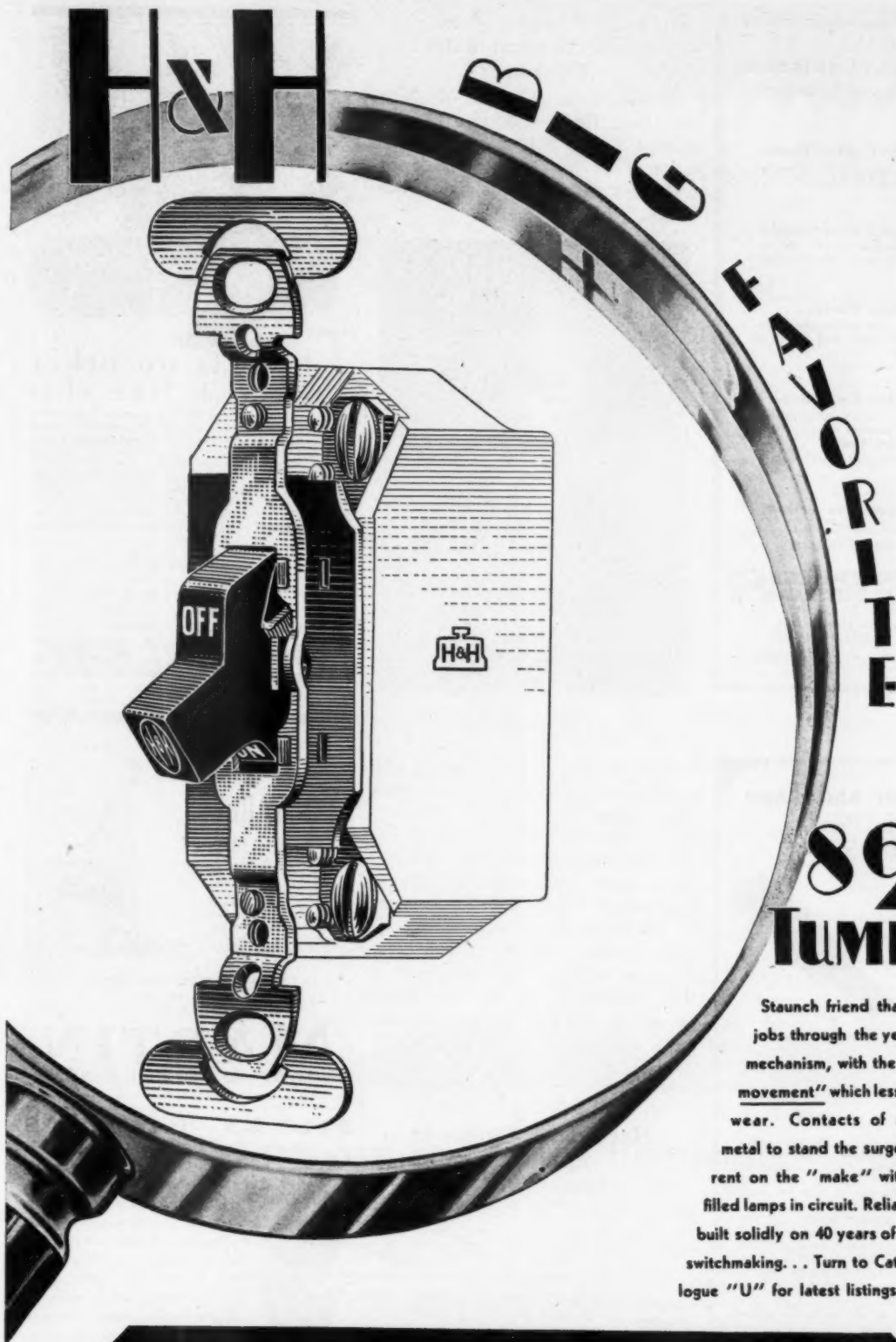
The General Radial Co., Cincinnati, Ohio, announces a small self-contained precision lathe, particularly suitable for truing armature commutators and other work for motor repair jobs. The many features of this lathe include graphitized micarta "V-Disc" drive which provides seven spindle speeds from 68 to 600 r.p.m. by means of a convenient hand lever; micrometer collars provided on both the cross slide which is adjustable-gibbed and has 6½ in. travel and the top slide which has 2 in. travel permitting precision work, and an enclosed built-in ¾-h.p. motor



Kliegl Bros., 321 W. 50th St., New York announces a small incandescent spotlight with the flexibility and control features of larger models and equipped with adjustable framing shutters allowing regulation and shape of projected light beam. The overall dimensions are 6 in. high, 7½ in. long and 4½ in. wide. It is provided with condensing and objective lenses, adjustable for focusing and designed for 50-watt, 115-volt, G. 16½ lamp with double-contact bayonet-candelabra base. The lamp receptacle is adjustable vertically permitting filament to be set in optical center; and a chromium plated, polished reflector is mounted back of the lamp. The spotlight is substantially made, compact, light in weight, well ventilated, and the back is hinged to permit access to the interior. It is set on a round, cast-aluminum table base, may be fastened in any position and is furnished complete with lens, framing shutters, a 9 ft. extension cord, attachment plug and lamp.



Chicago Signal Company, 312 So. Green St., Chicago, Ill. announces roto-lite, which has the convenience of a spot-light and a nite light combined, for illuminating corridors, hospital and hotel rooms. This light has a revolving enameled brass half dome, adjustably supported to prevent it from wearing loose. The light is adapted for 10 to 110 volts; can be provided with switch to turn off and on and can be arranged with other devices on the same plate, such as convenience receptacle, radio jack, etc. The roto-lite, it is stated, can be supplied in any finish.



8601 TUMBLER

Staunch friend that stays on your jobs through the years. Precision mechanism, with the "balanced movement" which lessens jar and wear. Contacts of a special metal to stand the surge of current on the "make" with gas-filled lamps in circuit. Reliability built solidly on 40 years of fine switchmaking. . . Turn to Catalogue "U" for latest listings.

HART & HEGEMAN DIVISION
THE ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890

Color Lighting Equipment For Interiors and Exteriors



See Color Hoods
For lamps up to 60 watts.
(Full and half types.)



Lace Color Hoods
For lamps 75 w. to 500 w.
(Single or two tone effects.)



Color Plates
For flood lights, spots, etc.
(Also square and oblong in shape.)



Color Cylinders
For Street lighting units,
wall pockets and decorative
lighting effects.
(Made semi or full circular)

Headquarters for Color

Ask for Illustrated Pamphlet
"PROFITS FROM COLOR"

REYNOLDS
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MANUFACTURERS RECO HIGH FLASHERS
TRAFFIC CONTROLS, SMALL MOTORS, ETC.

2623 W. Congress St. - Chicago, Ill.

Bullington New Westing- house General Sales Supervisor

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed L. C. Bullington, formerly manager of its Detroit office, general sales supervisor at East Pittsburgh.



L. C. Bullington

Mr. Bullington has been connected with Westinghouse since 1889, when he joined the Westinghouse, Church, Kerr Organization. During 1903, when the organizations entered into a merger, he was transferred to the sales department of Westinghouse Machine Company with headquarters in Atlanta, Ga. He has held various positions in the organization and has been manager of the Buffalo office, Cincinnati office and was made manager of the Detroit office in 1928.

* * *

Horolectric Clocks in Production

The Horolectrical Corporation, with plants at 216 West Fourteenth St., and 9-13 Desbrosses St., New York City, is now getting under way with a complete line of electrically operated time switches and clocks.

The designing and manufacturing of time-pieces has always been called the "horological" science. The combination of this science with the electrical brings the name "Horolectrical" Corporation.



There is no other wrench like this

There is no other pipe wrench that even feels like this wrench in your hand. It has perfect balance, a satisfying heft. Ten major improvements in design and construction: (1) No "frame" or nut housing, (2) Nut cannot fall out, even with jaw removed, (3) Heavy forged legs take up side strain, (4) Improved ball and socket action, (5) Hidden coil spring, (6) Handle strongest at point of strain, (7) No projections below line of handle, (8) Replaceable lower jaw, (9) Self-cleaning, cannot clog or "gum up", (10) All steel.

Write today for Catalog P-10
which describes a full line of
improved pipe tools.

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"
341 N. Francisco Ave. CHICAGO, U. S. A.

ARMSTRONG BROS.
CHICAGO

The Solder and Tape Age Is Past!

Up-to-date contractors use
IDEAL Universal Wire Con-
nectors—then they under-
bind—and make more
money.

IDEAL



Fully Patented—
No. 1,700,985 is-
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Infringements of
"screw-on" con-
nectors will be
prosecuted.

IDEALS are Solderless—Tapeless—with
current carrying sleeves protected by
heavy wall of high grade insulation.
No shorts due to pierced tape—no
smoked ceilings, danger of fire or loose
connections.

IDEALS fit all common wiring and fix-
ture joints, make better electrical and
mechanical connections and MORE
PROFIT FOR YOU. They're used
EVERYWHERE.

Approved by Underwriters' and Factory
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Ideal Commutator Dresser Co.
1041 Park Ave., Sycamore, Ill. 330

☐ Please send me one trial carton of 100
"Standard Universal" Connectors at \$3.35.
☐ Please send me a free sample connector.

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City.....State.....

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IT'S PORTABLE

Carry the Martin
Vise Stand and Pipe
Bender with you...
anywhere; set it up
in one-half minute.
Will not skid or tilt.
A genuine TIME
SAVER for cutting
or threading conduit
up to 2 1/2". Bending
capacity 1/4". Write
to



H. P. MARTIN & SONS
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MARTIN
VISE STAND AND PIPE BENDER

SILVEY HICKEYS Won't Slip, Crush nor Kink



Made in 1/4",
3/8", and 1-in.
sizes. Patented.

A deep groove on the inside of the
bend removes pressure where pipe is
shortening and thickening; allows it
to flow outward instead of pushing it
inward. Compare its work with work
done by any other hickey. Get a
set. Your money back if you're dis-
satisfied for any reason. Thousands
sold without complaint. Electricians
swear by it.

Ask Your Jobber

Jobbers everywhere have Silvey Hickeys in stock.
If yours will not supply you, we will ship direct.

SILVEY PIPE BENDER COMPANY
2215 Brighton Ave. Kansas City, Mo.



ELECTRICAL TRADE CATALOG

News and Views of MODERN CATALOGING in the ELECTRICAL TRADE

IN this column in the future will appear "notes from the trade" showing how users of Electrical Trade Catalogs like Electrical Trade Catalogs—and notes giving your views are invited.

Tell us which catalogs you like—and of course which catalogs you don't like—and why.

Tell us, please, how these catalogs—bound together in one handy, easy-to-find binder have helped you locate names, and products, and places—how they have helped you in your estimating—in your selling—in your daily work.

Tell us—and this is very important—about the things you expected to find and didn't.

We say "this is very important" because it is only with the aid of suggestions of this kind from you that we can show manufacturers of products you need how important it is to have catalog data on their products in the National Group Catalogs of the Electrical Trade.

Every manufacturer selling to the Electrical Trade—electrical supplies and equipment—should have his catalog data in Electrical Trade Catalogs, because there is where you like to have catalog data—in easy-to-find, easy-to-use form.

One hundred and ten manufacturers have put their catalog data in the current binder—to help you. Many new companies are including their catalogs in the 1930 Edition—soon to be distributed to you.

Others will include theirs when they see of how much value a collection of catalogs of this kind is to you.

And all will put in comprehensive buying data when they see that it is real buying data you like to have.

So feel free to write your views for this column—your views will help you get the data you want, will show the manufacturer that he is working along the right lines, will help us build for you a Catalog Collection that will be of increasing value as one volume gives place to another.

Watch this column closely!

**McGraw-Hill Catalog and
Directory Company**

475 Tenth Ave. at 36th St.,
New York, N. Y.

New Catalogs for the 1930 Edition are now Being Collected!

EACH year sees the complete re-building of Electrical Trade Catalogs.

Each year progressive manufacturers of electrical supplies and equipment revise their catalogs that are sent to you in this handy binder so as to include the latest buying data, information upon improvements, and descriptions of their new products.

This annual revision feature of Electrical Trade Catalogs enables manufacturers to maintain a def-

inite schedule for keeping their catalogs up-to-date.

In this way, the manufacturers provide you with a convenient source where you can be sure of finding the latest catalog data you need to help you buy.

The 1930 Edition of Electrical Trade Catalogs will be sent you as soon as off press to replace the 1929 Edition which you have been using.

**Always "Look It Up First" in the
National Group Catalogs of the Electrical Trade!**

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MORE FOR THE MONEY

- One-piece All-Aluminum Casting
- No Bolts or Screws
- Rust and Corrosion-Proof
- Totally Enclosed Special Ball-Bearing or Explosion-Proof Motors
- Special Ring Design Prevents Back Pressure
- Complete Range of Sizes
- Endorsed by all Lines of Industry

Write today for Distributor Literature

MEIER ELECTRIC & MACHINE CO.
136 South Meridian St.,
Ind. 1904 INDIANAPOLIS, IND.



QUALITY REFLECTORS at a PRICE!

... that means increasing profits for you! Yes, contractors make a surprisingly big profit on every Jackson installation. And their high quality assures your customers of complete satisfaction! There's a type for every installation. Write for bulletin and new low prices.

Jackson Electrical Co.
910 W. Van Buren St., Chicago

JACKSON

The control system used in connection with the colored lighting used in the ballroom of the St. George Hotel, Brooklyn, N. Y., which was designed and built by the Frank Adam Electric Co., St. Louis, Mo., is completely described in a booklet just printed by the company. Several problems had to be overcome in this control system due to the volume of electric current used, which is in excess of 500 kw.

L. Erikson Electric Co., 6 Power House St., Boston, Mass., has just published catalog No. 100 describing and illustrating Erikson lighting equipment, including reflectors, signs and lighting specialties.

General Electric Co., Schenectady, N. Y., has just issued bulletin GEA-19F, superseding GEA-19E and in part GEA-181B, covering CR-7006-D5 and D7 a.c. enclosed magnetic switches; bulletin GEA-1231 entitled G-E Quiet-Operating Induction Motors; bulletin GEA-1190 and GEA-1181 on G-E Novalux Aviation Lights.

Classified Advertising

For Sale: One Edwards telephone practically new, consisting of one No. 3890 30-station annunciator and 26 No. 3895 telephones. Lists at \$1097.00, our net cost \$548.50, sale price \$320.00. Also approximately 10,000 25-watt yellow inside colored National Mazda and Westinghouse lamps for sale at 10 cents each; 35 No. 81 X-Ray Mogul reflectors, listed at \$80.00 each, sale price \$25.00 each, suitable for general floodlighting and adjustable; approximately 80,000 feet No. 6 DBRC wire in lengths from 100 to 300 ft., used but once, in good condition, sale price \$21.00 per 1000 ft. Will accept offer on large quantity of wire. Address: Raphael Electric Co., 1405 Fifth Avenue, Pittsburgh, Pa.

For Sale: Successful contractor-dealer business that owner has been building for past eight years in rapidly growing city in Southern California is now offered for sale because of circumstances that has made it necessary for owner to retire from business. Anyone interested in owning and operating a small concern please write Box 330, Electrical Contracting, 520 No. Michigan Ave., Chicago, Ill.

Wanted: Sales engineer to sell centralized radio and public address systems, should have knowledge of contractors' problems and applying radio equipment. Contact with consulting engineers and architects desirable but not essential. Location Metropolitan New York. Address Box 331, Electrical Contracting, 520 No. Michigan Ave., Chicago, Ill.

For Sale: Electrical merchandising and house wiring shop in one of the most progressive cities in Michigan. Have RCA franchise and General Electric refrigeration. Reason for selling. Address Box 332, Electrical Contracting, 520 No. Michigan Ave., Chicago, Ill.

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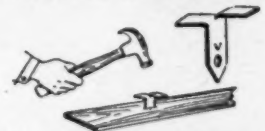
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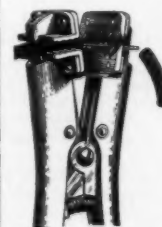
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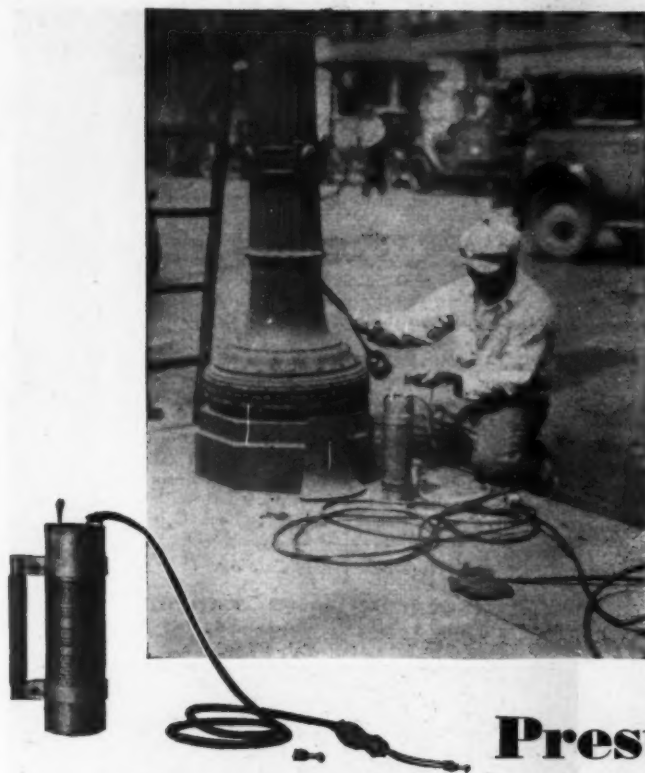
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